THIRD SERIES VOL 55 NUMBER 6 APRIL 1948

THE JOURNAL OF THE ROYAL INSTITUTE OF BRITISH ARCHITECTS

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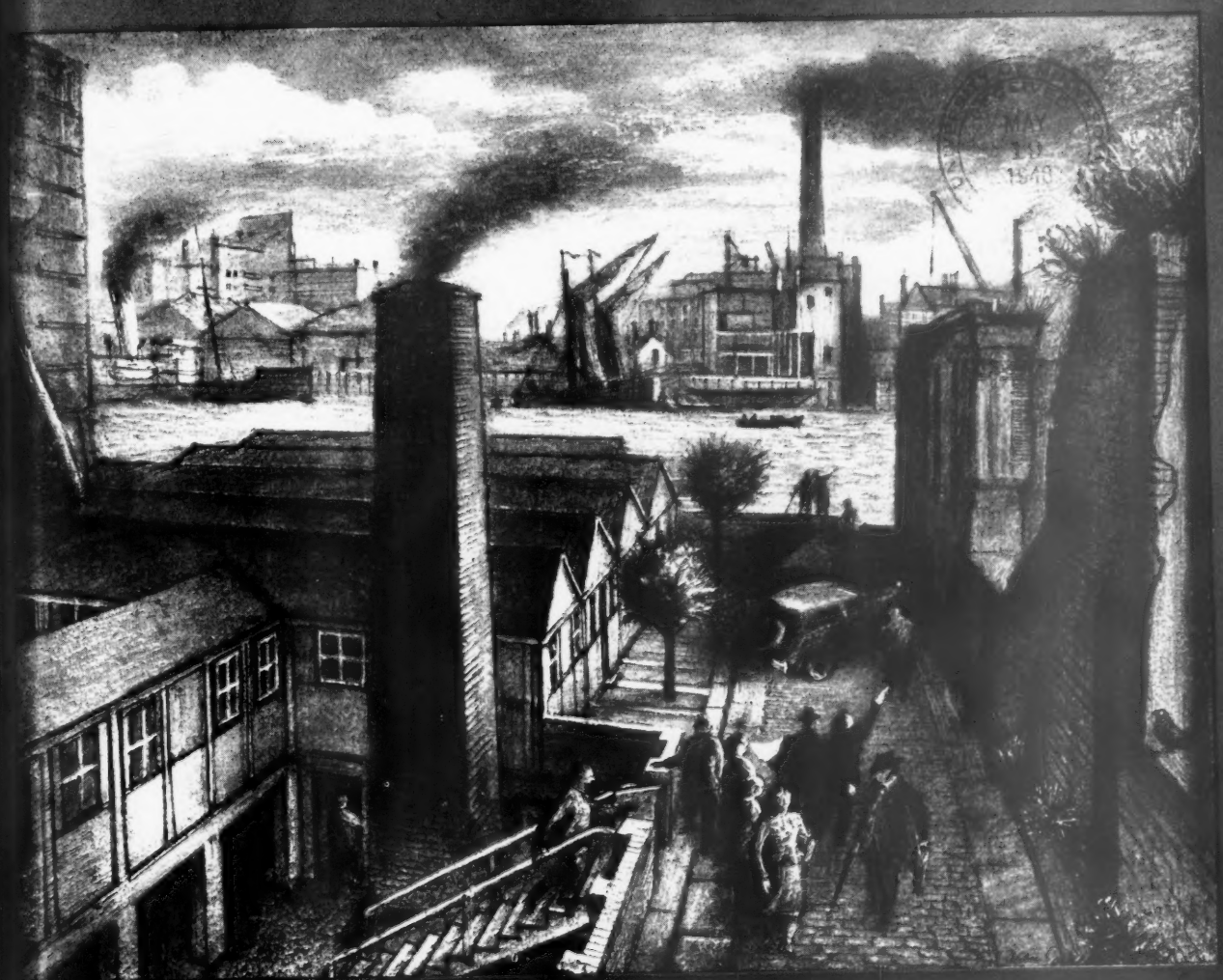

[illegible] amid the ruins of a warehouse in the City of London. From a drawing by Alan Sorrell

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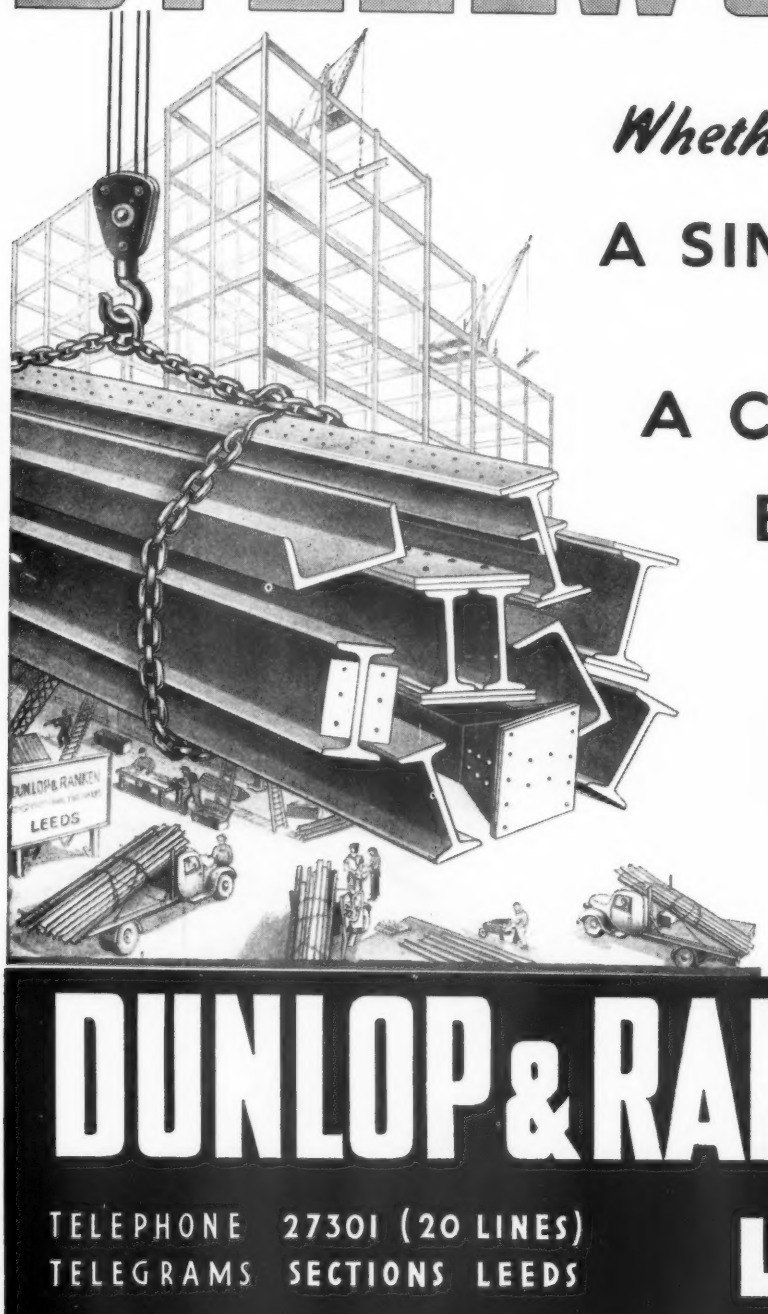

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The Annual Report

As last year, the Annual Report for 1947-8 is being printed separately and sent out with the Council's Nomination List on 19 April to Fellows, Associates and Licentiates in the United Kingdom and Eire. While the Report reflects the immense amount of routine work which the Royal Institute performs on behalf of members, this year it does not escape being coloured by the difficult time through which we are passing. The item in the Council's report 'The Curtailment of Building and the Position of the Private Architect', is certainly something two years ago we did not expect to see today.

Otherwise the affairs of the Royal Institute are remarkably healthy. The general meetings have attracted record attendances; the conference on school planning and construction was an outstanding success, auguring well for the forthcoming one on housing layout; the Dublin conference was one of the best and most interesting of the series of annual conferences ever held. The year has seen the establishment of very close contacts with Government departments, to a degree beyond expectation before the war. The work of the Library grows apace, while that of the Public Relations Committee is vigorous and widespread; those who wonder what the Royal Institute does in the way of educating the general public should read the report of the P.R. Committee. An important item this year is the consolidation of the Salaried and Official Architects' committees; this section of Institute activities is now firmly established and rapidly growing in importance.

New Edition of the Kalendar

To meet the increasing demand from members and students for an up-to-date Kalendar, it is intended to publish a new issue in the autumn of this year, and every effort will be made to produce it as early as possible.

The latest addresses which have been notified to the R.I.B.A. by members and students will be printed in the new Kalendar, and it is assumed that notification of changes of address have already been sent to the Secretary, R.I.B.A., either on the subscription reminder notice, which was sent out in January, or by letter.

Members and students wishing to notify new addresses for publication in the new Kalendar should do so at once, as, in order to conform to the printer's time table, changes of address received after 15 May (overseas members and students, 15 June) cannot be included.

Owing to paper restrictions it will still be necessary to restrict members and students to one address each.

Secretary of the Royal Fine Art Commission

The Royal Fine Art Commission has appointed the Hon. Godfrey Samuel, M.A., A.M.T.P.I. [*F*], as Secretary in succession to Mr. A. B. Knapp-Fisher [*F*].

Mr. Samuel is a member of the R.I.B.A. Architectural Science Board and a member of the Council of the A.A. His many friends will wish him all success in this important new appointment.

The R.I.B.A. Schools Exhibition

The title of this year's major exhibition by the R.I.B.A. has been changed to 'New Schools'. It is to be opened by the Minister of Education on 25 May. Work on the exhibition is proceeding rapidly; it promises to be one of the best looking and most interesting public exhibitions that the Exhibition Committee has arranged. The Council of Industrial Design is co-operating on the furniture and school equipment section which will be arranged in a classroom constructed inside the Henry Florence Hall. An automatic filmstrip projector, lent by the Educational Supply Association, in the classroom will show photographs of schools from abroad.

The exhibition handbook, now being printed, has been compiled from contributions by twelve experts and is copiously illustrated. It is primarily for members of the general public who already have some knowledge of school design; it puts before them the effects of the 1944 Education Act and of recent technical advances on school planning, design and construction—effects which are producing what amounts to an entirely new type of school; indeed it has been found that hardly any photographs of pre-war schools are usable in the exhibition or the handbook. Because the handbook is primarily a technical reference book it will be of use to architects as well as laymen.

Office Experience for Students of Architecture

Members are reminded that Registers of Architects who are prepared to take students into their offices to gain practical experience are kept by the R.I.B.A. in London, and by the Allied Societies in their respective areas. Members willing to co-operate in this scheme are asked to notify the Secretary, R.I.B.A., if their offices are in London, or in an area not covered by an Allied Society; or the Secretary of the Allied Society of their particular area. They should state the number of students they are able to accept at any one time, and if they are willing to pay any remuneration for their services.

With the approach of the summer vacation, the Institute is receiving a large number of enquiries from students anxious to work in architects' offices for the greater part of their vacations, and the Institute wishes to help them find suitable places to continue their studies in this practical way.

Mr. Anthony Chitty [*F*] with Signor Umberto Turpini, the Italian Minister of Works, who opened the 'Replanning Britain' Exhibition when it was shown in Milan recently. The exhibition was arranged by the R.I.B.A. for the British Council and has visited several countries

Timber Brains Trust

The Henry Jarvis Hall was crowded in the evening of 15 March for the meeting of a Timber Brains Trust, organized by the Timber Development Association. The 500 people present included architects, engineers, builders, members of the timber trade, representatives of local government and members of the Ministries of Health and Works. The 'team' consisted of Dr. W. P. K. Findlay and Mr. E. H. Nevard of the Forest Products Research Laboratory, Mr. E. H. B. Boulton, Technical Director of the T.D.A., and Mr. P. O. Reece, Constructional Research Director. Mr. H. A. Cox, of F.P.R.L., was unable to be present through illness. The Question Master was Mr. G. V. Donnelly, Chairman of the T.D.A. Public Relations Standing Committee.

For over two hours, without any pauses, questions were fired at the team from all parts of the hall; these covered almost every aspect of the use of timber from the effects of blue stain on strength to the use of timber as a substitute for steel under present conditions in this country. Finally, the Question Master had to close the proceedings because there were no signs that the flow of questions was slackening, and he announced that, so far as he could determine, the team had failed to answer only three questions, and these because scientific data on them was lacking. Someone remarked that he had attended meetings in the Henry Jarvis Hall when the time had seemed to pass much more slowly. Altogether the meeting was interesting, informative and amusing.

International Union of Architects, Lausanne, 28 June-1 July 1948

The first congress of the International Union of Architects at Lausanne, from 28 June to 1 July, will attract architects from all over the world. The theme of the discussions will be *The Architect Confronted by New Tasks*.

The opening ceremony of the congress will take place in the University Hall on Monday 28 June, and the first discussion will follow on the Tuesday morning, coming under the subheading of *The Architect and Planning*. The second session, *The Architect and the Industrialization of Building*, will take place on Wednesday morning and afternoon, and the discussion on the last morning will be on *The Architect, State and Society*. The programme for other periods in the day will include receptions and coach tours, and on 2 July the first study tour will commence, lasting until 5 July, and will include visits to Geneva, Berne, Zurich and Basle. A more extensive study tour will be carried out from 5 to 10 July.

Conference details may be obtained from the Secretary, R.I.B.A.

Experimental House Heating

The second large scale trial of methods of house heating at the Building Research Station was inspected by a party of R.I.B.A. Council members on 17 March at the invitation of the Director of Building Research. Whereas the earlier series of full scale tests, described in the JOURNALS of January and October 1947, were concerned with houses having different degrees of thermal insulation, in this new series 20 houses, built at Abbots Langley, Herts, are of identical construction but contain almost every known method of heating and type of appliance. Sixteen of the houses are of the 'through living-room' type with a dining space off the kitchen; the other four have kitchen, living-rooms and parlours. All the houses have the same degrees of insulation in walls, ground floor and roof; the window and external door areas in the two house types are approximately equal, so is the length of crack round opening windows and doors.

Nineteen different heating systems have been installed, ranging from pre-war methods where bedrooms were unheated, to 'background and topping up', and finally to full central heating. The tests are essentially of heating systems employing solid fuel, gas and electricity and covering all factors in the house where fuel is consumed, not only space heating but also hot water, cooking, ironing, lighting and radio. Up to now the trials have been conducted with a standard imaginary family following a routine carried out strictly by laboratory assistants through a whole heating season. The second phase of the experiment was beginning when the R.I.B.A. party visited Abbots Langley. In this, the houses are let to tenants who live normal lives and pay for such fuel as they consume (but are not restricted as to quantity). This second phase will last for some years because the tenants will exchange houses from time to time, thus tending to even out individual family habits. The houses are fitted with recording instruments which are read at a central station so that complete records of internal as well as external climates can be kept. The compilation and analysis of data on the first phase is now proceeding and a summarizing paper will probably be published later on this year.

The R.I.B.A. party consisted of several leading practitioners in house design and many practical points were discussed with the officers of B.R.S.; it appeared to be generally agreed among the visitors that practically nothing had been overlooked and that the published results should be extremely interesting and useful. Mr. C. H. James, R.A. [*F*], thanked the officers of B.R.S. on behalf of the party.

Honours conferred on Members

His Majesty the King has created Lord Harlech [*Hon. A*] a Knight of the Garter.

Mr. James Shearer [*F*] has been elected an Academician of the Royal Scottish Academy.

Mr. A. G. R. Mackenzie [*F*], President of the Royal Incorporation of Architects in Scotland, has been elected an Associate of the Royal Scottish Academy.

On the Cover

The drawing by Mr. Alan Sorrell, specially made for the R.I.B.A. JOURNAL, is of a temporary factory on a blitzed site in the City of London for Messrs. Nickeloid Electrotype Company Ltd. The architect is Mr. Richard Henniker [*F*].

R.I.B.A. Diary

MONDAY 3 MAY. Annual General Meeting.

WEDNESDAY 26 MAY—SATURDAY 19 JUNE. 'New Schools' Exhibition. Open daily (except Sundays) 10 a.m.–6 p.m., Saturdays 10 a.m.–5 p.m.

THURSDAY 27 MAY–SUNDAY 30 MAY. British Architects' Conference, Liverpool.

WEDNESDAY 9 JUNE–THURSDAY 10 June. Conference on 'Housing Lay-out in Theory and Practice.'

The Architect and the Economic Crisis

A Message from the President

MEMBERS WILL have read the statement published in the March issue of the JOURNAL giving a brief account of my recent meeting with the Minister of Works and representatives of other Government Departments. There is a desire amongst members, however, to know more of the part played by the Institute in its endeavours to minimize the effect of the present economic crisis on the profession.

To go back a few years; it was obvious that, on the cessation of hostilities, there would be a shortage of building labour and materials necessitating some system of licensing and priorities. It was also obvious that these priorities would include such work as the repair of war damage, housing and schools, and for which local authorities would be largely responsible. For this reason an early approach was made by the Institute to the various Departments of the Government urging that local authorities should engage architects in private practice upon much of this work. Lists of architects willing to carry out housing, war damage repairs and other work were in fact supplied to local authorities by Government Departments.

Most of us hoped that within reasonable time, and with the building up of the labour force and the greater availability of materials, the volume of work would increase and that architects, whether in private practice or employed by local authorities and other public bodies, would be fully employed. Disappointment resulting from the economic crisis and the cut in capital investment has, therefore, been all the keener. Those who fear they may be the first to suffer in consequence of the abandonment of work seem to doubt whether the Institute has been sufficiently active in protecting their interests.

The Institute cannot itself create work. Its primary function is to ensure the development of Architecture. It will always demand that architects shall be employed on all work coming within their province and urge the advantages of forward planning in readiness for any revival in the building industry. If a reduction in output of the industry is deliberately planned, then architects must have less to do and those who may need work most may be the first to suffer. This may be hard, but it is inevitable, and I know no method by which such work as must be done can be diverted to those who need it most—neither has one been suggested to me—which will retain that freedom of selection which we must all recognize as the right of every client.

Some members have urged that the Council should attack the economic policy of the Government and press for the withdrawal of the 'White Paper'. It has been the traditional policy of the Institute not to take any part in political issues. The Council has therefore determined—and in my opinion most wisely—to maintain its traditional policy, whilst taking all possible steps to protect the interests of its members and particularly of those who may experience hardship in times of crisis.

Those anxious to maintain an established practice, and younger men wishing to launch out for themselves may, by reason of a sense of frustration, be tempted to feel their interests are not receiving sufficiently active consideration. It may be unpleasant—though sound—advice to suggest that, until conditions become more settled, they should consider the acceptance of such work as is available though it may not be of the nature they would normally accept. Work is available overseas for younger men, but great difficulty is being experienced in filling vacant posts. It is surely unfair to suggest, at a time when building projects are being curtailed or abandoned, that the Institute is lacking in initiative if it cannot find work.

During his term of office the President of this Institute meets members of the Government, the representatives of local authorities and great public undertakings, and many of those interested in the work of the profession. It is not always possible to disclose what takes place at these meetings, but I can assure all members of the Institute that, fully conscious of present difficulties, I have made use of every possible opportunity to urge the importance of forward planning, which will not only ensure readiness to go ahead with great building undertakings when conditions permit, but also reduce the possibilities of unemployment amongst architects.

Though this note has been prepared for the information of members of the Institute it may fall into the hands of some who are interested in building projects and the services which the profession renders to the country. I therefore set out some of the more important suggestions I have made in negotiations which I have carried out so that members will be informed, and those to whom the suggestions have been made may act upon them:—

(*a*) That the Government should allow architects already commissioned by them to proceed upon the schemes entrusted to them and commission others for those projects which must be put in hand as soon as conditions permit.

(*b*) That the various Government Departments concerned should urge local authorities to proceed with forward planning.

(*c*) That should the volume of work in Government or Local Authority offices necessitate additional architectural help, the employment of architects in private practice should be considered as an alternative to the expansion of established staffs.

(*d*) That all concerned in building projects should use this respite to prepare for early action when the present bans are lifted.

I should be wanting in fairness to those to whom my representations have been made if I did not express my appreciation of the very sympathetic consideration given to my appeals. I have noticed with great satisfaction the measure of good will obtaining between the various Ministries of the Government, local authorities, and the Institute, and the readiness with which consultation has been made possible.

These representations have not been in vain. In his Budget speech on 6 April the Chancellor of the Exchequer used these words: 'The fact that we were, he hoped temporarily, unable to embark on more extensive schemes should not stop the preparation of planning, and planning of schemes for the future. Indeed, it might be an opportunity when engineers, architects, and other professional persons were less heavily engaged on urgent work to get ahead with such plans.'

Speaking at Manchester on the same day the Minister of Works said 'the planning of work in architectural offices must continue and the general preliminary work of schemes of all kinds be brought to readiness so that when opportunity affords we shall be ready to go forward with greater vigour than ever and with added efficiency and effect because we have used our opportunities to make our buildings more perfect.'

Both statements have appeared in the Press for all to read. That made by the Minister of Works was fully reported by the B.B.C.

I can only hope that this very clear statement of the desire and intention of the Government will be acted upon and I am most grateful to the Ministers for making it. It should do much to relieve anxiety.

If there is more that I can do I am at the service of the Institute and its members. If any member can suggest any method whereby, in a period of national retrenchment, work can be found for those who fear unemployment, I know the Council will sympathetically consider it, but any such proposal must avoid political issues and preserve the right of some measure of selection to those willing to place commissions with architects who are feeling the effect of retrenchment.

I make one other suggestion with some hesitation. It may well be that some principals of busy private offices may be able to direct work which would normally come their way to those who find themselves in difficulties. I make the same appeal to my brother official architects, but without the same hesitation. There is much they can do. They possess the knowledge of work which is urgently required, and they know the qualifications of those available to undertake it. Where hardship exists they should be able to extend a helping hand by recommending their Authority to employ architects in private practice.

It is my sincere hope that this statement may allay the anxiety of those who, having

no opportunity of knowing the constant action taken to protect their interests, may feel they are being overlooked. It may well be that the present restrictions will be removed sooner than some pessimists expect. In the meanwhile it is only by pulling together as a united profession and sinking all sectional interests that we shall weather the storm which is affecting not only members of this Institute but the whole nation.

L. H. KEAY,
President.

20 *March* 1948

The American Scene

By Howard Robertson, S.A.D.G. [*F*]

Read before the Royal Institute of British Architects, 9 March 1948
The President in the Chair

THIS TALK is of an untidily discursive and inadequate nature. I am trying to present a word picture; and I find it too abundant for the frame of an R.I.B.A. address. I have wished to enliven it with slides, and found pictures difficult to secure. Some I have culled, with the Editors' permissions, from the ARCHITECTURAL RECORD and the ARCHITECTURAL FORUM, and some I have taken from records of the United Nations building scheme.

I have divided my talk into three sections. I am dealing first with some impressions of the architectural scene, secondly with my experiences on the Board of Design of the United Nations, and finally with some minor facets of the American scene which strike me as not irrelevant.

My first, and strongest, impression on revisiting America was the relatively vigorous and joyful state of American architectural design today. I use the adjective 'joyful' advisedly. For the leading American architects, and many of their clients, are remarkably free from design conservatism, and seem to be willing to try experiments in design and construction with an exuberant assurance that comes partly from self-confidence and partly from economic abundance. There are many Americans in every class who are willing to try everything once, because they feel that if there is a failure it can be washed out and a fresh start made.

That applies equally to a business or a building. An architectural experiment which fails in part (and few fail completely) can be dismissed as a mishap or as a bad debt. Its fate is to be pulled down and rebuilt on new and better lines. That applies most of all to commercial structures, much less of course to the private home, scarcely at all to official buildings and monuments. These latter are, I think, regarded as symbols of permanence in a world where so much is ephemeral. If that surmise is correct it would help to explain the restrained and often classic character of so many Government buildings in Washington and some of the town halls in other cities. Monuments, such as the Lincoln Memorial and the Jefferson Memorial in Washington, are buildings which may disappoint many architects as not being contemporary in expression. But I think the American public likes them. They are calm, and dignified, and their severe brand of neo-classic is timeless in that it is already dated. It is unfair to say that these designs are completely still-born. With all their faults, they succeed in communicating an appropriate emotion to the common man. And architecture which does that is far from negligible, even though it cannot qualify as creative in the sense of the highest aspirations.

At the other end of the scale we see on the horizon semi-public buildings which are daringly experimental, such as Frank Lloyd Wright's Guggenheim Gallery; but quite a number of these are paid for by privately collected funds, and the donors are sometimes very willing to take a risk.

The Museum of Modern Art in New York was quite experimental in many ways. It broke fresh ground, and probably paved the way for the Saarinens and Swanson to win the competition for the new Smithsonian Museum in Washington, with a very modern concept. It cannot be said that it has had any effect on the design for the proposed Guggenheim Gallery, for Wright would only acknowledge as an influence Louis Sullivan who is now deceased. But it may conceivably have had some sway with Wright's clients.

The Guggenheim building is familiar to us by photographs, and well illustrates the spirit of carefree bravura in which many Americans enter into a scheme for putting up a costly experiment. Its dependence on ramps, and some of its other characteristics might conceivably prove unsatisfactory in practice. But even if it costs a great deal to build and maintain, and even if it cracks and leaks, the promoters will probably find it to be an investment well worth while. People will come from all parts of the world to look at it and the pictures in it. Like Wright's Johnson office building in Racine, it will have enormous publicity value. And to an American, publicity value is an asset worth paying for. But it must not be overlooked that Wright's success is fundamentally due to the fact that he is an architect of outstanding genius. I think we have architects here who could plan with equal boldness and even with equal eccentricity. I have seen house designs by students in which platforms of glass and concrete were hung by wires from a central pillar containing the refrigerating and heating ducts and the dark room. And I am credibly informed that the schemes are quite practicable. I am also sure that the results would be agreeably sensational, as well as highly instructive. But they are not likely to get built.

Which brings me to an anecdote of American daring, this time by an architect who has made his name, but who was a poor though brilliant student when he made his great experiment. This was to purchase, for his young wife and himself, an all-metal prefabricated house which stood on stanchions in an exhibition and which subsequently was transported to a charming country site. This house, for its day, had absolutely everything to make it qualify as modern. All the rooms were upstairs; the bathrooms and toilets were contrived in cunning curvilinear forms in the middle of free spaces, where their plumbing noises would be uninhibited. The whole of the down pipes passed through the column supporting the living room, and were acoustically strategic. The kitchen was full of sharp metal corners. My friend the architect bought this house because he was charmed by its astuteness, and seduced by that of its promoters. But chiefly because it had a dumb-waiter which came up from the kitchen and landed on the bedroom terrace. The house is still there. It was ruinous in cost of erection and maintenance. It leaked copiously. It rusted. My friend no longer lives in it, but has built a real house next door. He has kept his prefab as a pet, and a reminder of human frailty. But now he thinks to pull it down and sell the nuts and bolts, for though he has learned a great deal by living an experiment, he now feels that the day has come to try his experimenting on his clients.

The spirit of adventure which invites one man to build an all-glass house in a walled garden, just to try it; another to have a house designed exclusively for a view or because it has no view at all; a third to have circular bedrooms with no windows because the maestro says it should be so; that is the spirit which sometimes brings out merely the impishness of the designer, but which may also encourage the boldest products of architectural invention.

Making mistakes is part of the laboratory process of modern architecture. It is a pity if mistakes cannot be afforded. For without experimental research there is no rapid progress. Here we are rarely in a position to let ourselves go, we are trammelled by finance, regulations, permits, bye-laws, and officialdom generally, as well as by a conservatism which is bred of the fear of risking too much on a gambler's throw. Our excuse for timidity is real. We

have a narrower field of opportunity, a limited scale, and a dearth of tempting sites. Perhaps in our new towns, or in one at least, we may be permitted, even encouraged, to establish a field laboratory of architectural experiment in design as well as structure.

In commercial work the American client is not afraid to spend. He modernizes unceasingly. He finds it pays to do so. I read recently of the experience of a chain of shops which had transformed some of its branches along new lines of display and service to the customer. These branches had increased their sales by 15 to 20 per cent.

Of course, there are some concerns whose old-fashioned character is their trademark and secret of success. No one would want to remove the clay pipes from the ceiling of Keen's Chop House in New York and substitute peach mirror. But the average American business man has to keep moving or get out. And no sooner is one bright idea worked out than he is ready for another. It may be the restless life, but it is the stimulating one, and, I think, the joyous one.

The briskness of the American tempo has, of course, been slowed by the aftermath of war. Scarcities of labour and materials exist; prices of both are high. But the standard has not noticeably declined, and there is little 'utility' finish and equipment except in low cost housing, and this finish would, with some notable exceptions, be classed here as comparatively luxurious. When the American cannot get what he wants he may use a substitute. But he does not readily cut his basic standard. Rather he does without. The standard of American finish, as well as that of design in general, seems to me to remain very high though my experience is necessarily very limited. It is saddening to note the difference between that conception of a standard and our own enforced poverty standards, because through disuse we are risking to lose our craftsmanship, our design faculties, and our sense of quality.

American costs, more than double prewar, still remain something of a puzzle to our building economists. Special missions have been to the States to study these things. I will only make one or two comments from my own limited observations, which are: that American costs per cubic foot appear to be about the same as ours but for a much better finished article; that the working man earns about 2½ times as much, that he works at twice the speed, and that building contracting organization, planning, and equipment is on a higher plane than here. The reasons may be temperamental, financial, or governmental: I would not know. But climate, incentive, and ambition to attain a higher living standard, are undoubted factors. The car, the washing machine, and 'going places' are all incentives to spur the working man. And last but not least, there is the American woman. That woman wants things, wants them quickly, and wants them all the time. Her husband has to try to be a good supplier. If he is not, the American wife can apply the age-old remedy.

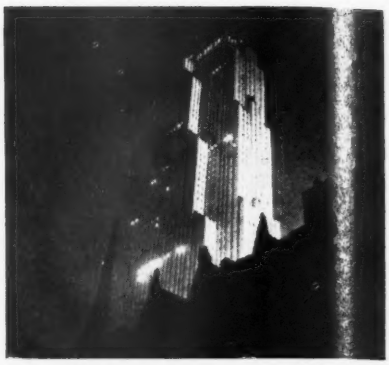
My second episode has to do with something not entirely American, and that is the genesis of the architectural design for the new Headquarters Buildings for the United Nations in New York. I would like briefly to allude to that important project which concerns us all, for some of us may feel, as do so many Americans, that in a concrete expression of building lies a powerful aid towards maintaining that spirit of the United Nations in which lie our hopes for future existence. These buildings are going to be inescapably a symbol, in addition to being the solution of a problem. And on the Director of Planning—Mr. Wallace Harrison—lies in consequence a great responsibility.

Model of the United Nations Headquarters Building

The history of the selection of the United Nations site is familiar to many. It culminated in the selection of a site on the East River in New York—over 17 acres of land with a frontage of 1,500 ft. or six city blocks. A magnificent situation, but a site over-ripe for development, for it housed a heterogeneous collection of mediocre buildings set in slum-like surroundings. Mr. Rockefeller gave it to the United Nations—a munificent and public-spirited gesture.

The choice of Mr. Wallace Harrison as chief architect was a natural one. He had already prepared schemes for this site and was thoroughly familiar with it. He is a man of wide experience and great capacities. And his office is one familiar with the New York building problem, including that of the skyscraper, at least one of which will almost certainly emerge from amongst the lower buildings forming the Conference and Assembly Halls of the new Headquarters.

Mr. Harrison's organization included provision for the services as a Board of Design of 10 architects from various countries, four others as consultants, and three American consultants as well. All these architects were engaged to come to New York for four months, but not all could remain that long, including myself. We came, and went, and returned again. The size of the board of experts, the speed which governed the production of a scheme and estimates, the multiplicity of languages, the variations of temperaments and tempers, the inevitable clashes of opinion, were enough to daunt the stoutest. But Mr. Harrison survived it all. And if his experts agreed on one thing without dissension, it was in admiring his patience and diplomacy. Discretion forbids me from relating many a spicy anecdote. But it will be sufficient for me to tell you that we had with us at first such diverse characters as Le Corbusier, a charming but firm Russian engineer called Bassov, and an equally charming and cultured Chinese architect and antiquarian. Then came Markelius, G. A. Soilleux from Australia, Cormier from Canada, and Niemeyer from Brazil. A Czech, a Greek, a Uruguayan, a Pole, and some others, helped to season an architectural pudding which at times threatened indigestion. The first published sketches produced an outcry in one of the biggest New York newspapers, led, I am sorry to say, by some of our American professional colleagues. It is obviously impossible to please everybody, and quite clearly a number of people were ardently hoping for a building with a dome or at least a building which would be a 'flop'. Instead, they got a skyscraper, and what some people described as a train of freight cars. Consternation was reported as general. But then it was also the case when the designs for the Rockefeller Centre appeared. And now the Centre is recognized as one of the magnificent sights of New York. Mr. Harrison has described the buildings as first and foremost a 'workshop for the United Nations.' I think that is fair comment. The Plan complexities are very great, and there is no exact precedent for such a scheme. And having been a modest worker on it I can only say that a scheme costing some 16 million pounds on a 17-acre site is a big one to evolve in such a limited time and under such conditions. But anyone who looks dispassionately at the international question will, I think, agree that extreme urgency in getting the actual building started is fully justified.



Above: the R.C.A. building, New York, floodlit. Left: a recent 21 storey office building in Park Avenue, New York, in which the mullions and breast walls form a structural box girder, the first line of stanchions being 15 ft. from the façade. Architects, Kalin and Jaçobs.

The Board of Design had at its disposal model makers, draughtsmen, and the inestimable services of Mr. Hugh Ferriss, an artist of outstanding ability who can pump perspective poetry into the most unpromising composition, merely by looking at it from the one precisely favourable point of view. I sometimes feel that the best way to utilize Mr. Ferriss's talents would be to toss him over the plans, go to bed, and turn up next morning to find the design all done. He is the perfect automatic pilot.

The method of working was for all members of the Board to get out schemes, and then to criticize them as a Committee. Some 30 sketch plans were produced; and the final one came out as a sort of synthesis of all the good points. A report was produced and printed, and the plans have been unanimously approved by the General Assembly. The situation is that Congress is probably going to sanction an interest-free loan of some 65 million dollars to build the first section, which will include most of the works except the Special Agencies or Delegations building at the north end of the site. The final shape of the design and its exterior treatment is a matter chiefly for Mr. Wallace Harrison and his associates; he has in Ralph Walker, Louis Skidmore, and Gilmore Clark consulting engineers and architects who are of the first rank; but for the moment the International Board of Design has finished its work, and the responsibilities are wholly American.

The scheme is not perfect. The site itself proved difficult, being so long and narrow. And there are many critics of the design, including Mr. Lewis Mumford, who has set out his view in the pages of the NEW YORKER. Just to show how the critics vary, I will quote two of them:—Henry Wright, Managing Editor of the ARCHITECTURAL FORUM, calls the scheme 'a completely workmanlike job.' Frank Lloyd Wright calls the design 'a super-crate, to ship a fiasco to hell.'

It is a far step from the gigantic United Nations scheme to the trivia which help to make up the background of the American scene; but there is a great deal to be learned from some of the detail of American custom, and I hope I may be excused for recording some minor impressions which, however slightly related to architecture, are indicative of trends. I feel that, if one were engaged in the export trade for example, it would be helpful to observe some American characteristics which, taken together, might produce an idea of what the American of today appears to like, at any rate in the east and middle west.

First, there is the growing taste for colour. It crops out boldly in the bodies and upholstery of motor cars: a New York car park, viewed from above, is quite a kaleidoscope. Colour also appears seasonally in men's clothing. In the spring and summer the male becomes a regular peacock. He dresses in colour—suits, shirts, and need I mention the painted ties which are stupendous. Everybody does it, and the effect is gay and heartening. Of course, this gives work for the cleaners. But Americans are lavish in clothes maintenance, and their linen is to English eyes extravagantly clean.

The gaiety is enhanced by the clear atmosphere, which can liven even the dullest streets; the daylight and atmospheric effects in New York are quite beautiful; they even moved Le Corbusier to rapture. At night the shop windows in the big cities are handsomely and skilfully illuminated. They often leave the lights on all night—a sight which would be extremely painful to any sensitive official of Fuel and Power. Outside the big towns are scores of service stations and roadside cafés which also burn their lights. But many of them also provide an all-night meal service as well.

The roadside cafés often belong to a chain company and are variations of proprietary standard types such as the 'Diners' built to resemble railway dining cars. The furnishings and equipment are smart and bright, and very complete. The kitchens are small and spotless, and the food is well prepared and quickly served. The motorist is sure of a good meal at a reasonable price, and he can park his car under supervision, and break his journey pleasantly and cheaply. We have nothing like these road-

Above: the Museum of Modern Art, New York; architects, Philip L. Goodwin and Edward D. Stone. Right: the Longfellow Building, Washington; architect, William Lescaze

side cafés here, nor have we a real equivalent of the tourist cabins, with room and bath and carport, where the motorist can stop at low rates and be assured of warmth, a bath, and sometimes also food. The bigger cabins have a restaurant or buffet; the others are generally handy to such facilities. The American likes this free and easy accommodation; he has no tips to pay, and much lower room rates. And he can stop along the highway, free from the turmoil of the city.

In the hotels proper, great importance is attached to room service, which is generally efficient and sometimes offers the same menu at the same price as the dining room. The feature here is the hot cupboards which are attached to the underside of trolley or table. The food stays warm to the last minute, and the table, with its folding flaps, is easily handled by the waiter. A feature of hotel, café, and roadside cabin equipment is the use of standard measures and sizes for crockery, glassware, etc. Whatever the design, the size seems to be the same. This cuts down cost and makes for easy replacement. A feature of American big-scale planning which strikes all visitors is the parkways and highways between big towns. A few points are worth observing. One is the provision of a verge, not macadamized, on each side of the highway. Any motorist who needs to stop for repairs pulls off on to this, so the rest of the traffic can flow on. Another point is that in places which rank as beauty spots the car parks are all arranged under trees or in clearings surrounded by trees. Thus they are out of sight, or inoffensive. At Washington's birthplace, Mount Vernon, is an admirable example of such forethought.

A curious but rather amiable idea has been adopted in some towns where street works or cable laying are in progress. A nicely lettered board over the trench or obstruction advises the public as to what is going on, and states that the work is being done in the public interest. This explanation of the obstruction, which appeals to the goodwill of the passer-by, seems to me to allay irritations and to be a step in the right direction.

The public in certain cases is well looked after, but there are gaps; the renowned infrequency of public conveniences for one. The American, however, has no compunction about using hotel or any other available facilities. On the other hand, the big railway stations maintain their extraordinary standard of comfort, cleanliness, and convenience. A small detail noticed at the Pennsylvania Station in New York is the provision of travellers' lockers, which open, and provide a key, in return for 10 cents in the slot. You can leave things there all day, and pick them up in the evening (unless you have lost the key).

More significant in the national life than these gadget facilities is the increasing provision for public enjoyment and recreation. There are a number of public clubs, open to all, for golf, tennis, and even polo, with very modest charges. The same applies to such municipal enterprises as the vast Jones Beach, near New York. This admirable stretch of sands is beautifully kept. No ball games or dogs are allowed on it, and the sands are scoured by attendants every day in the season, so the beach is always clean. You pay to park your car amongst hundreds of others, in numbered lots, but that is the only cost. The restaurants and cafés are excellent, and of varying grades. There are no houses; this is just a pleasure beach, and in the summer it is everyman's paradise.

In conclusion, I must state my disagreement with some recent travellers who have criticized the poor finish of furniture, equipment, and building in the States, and concluded that we had little or nothing to learn in those directions or from American organization. My impression is quite otherwise, though this may be due to a different field of experience. As I have already said, I have found that the American standard of finish, and of building generally, is in the main, superior to the run of our work except the most expensive and exclusive. I think we are losing our tradition of fine craftsmanship and conscientious work. And while that may be happening momentarily in America, there is the attraction of high wages, and possibilities of advance-

ment, which create a competitive and eager spirit and the determination to improve.

I must also call attention in passing to the artistic strength which accrues to America through immigration. The field of architecture there has always been vastly enriched by the steady influx in America of many distinguished and talented men, immigrants or refugees from foreign countries. Many of them have a contribution to make; they have sought the land of opportunity, for varied reasons (some of them not so praiseworthy). But the effect is to enrich the land and language of their country of adoption.

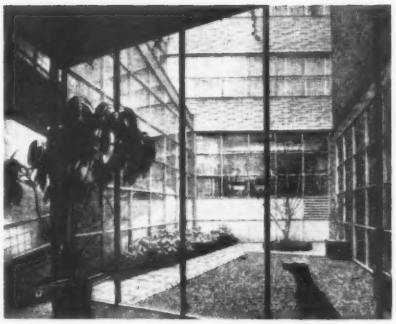
I have not come to the Royal Institute platform to boost the U.S.A. I have merely tried to give you my genuine impressions, for the little that they are worth, of some of the good things. I would sum them up by saying that I feel that American architecture is well on the up-grade. There is a great deal to criticize, far more to praise, in this country of individual enterprise.

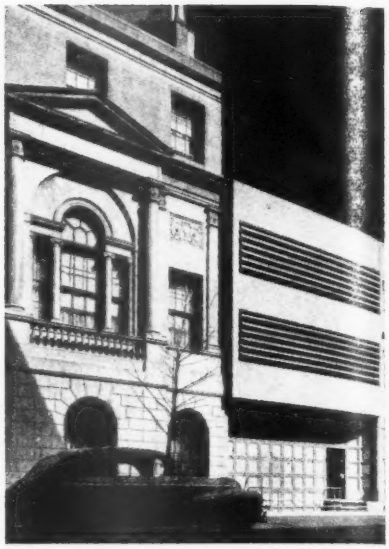
DISCUSSION

Mr. G. A. Soilleux, Australian Member of the Board of Design for the United Nations Headquarters Planning, who moved a vote of thanks to Mr. Howard Robertson, said: It gives me extremely great pleasure to be here this evening as a member of your profession from 'down under', and to be asked to propose a vote of thanks to Mr. Robertson for his very, very interesting and amusing talk. As a rule, those of us so far away on the other side of the world are very inclined to regard the great names on this side of the world as of people who sit on Olympian heights and do not very often come down to earth. I think that was rather the way I regarded Mr. Robertson before I actually got to know him better.

Other than at second hand, I had only known Mr. Howard Robertson before at a distance, and my friendship with him has only dated back for the last 12 months when we were thrown together in the queer boiling pot he has described to you, of the Headquarters Planning Office of the United Nations. The high pressure at which we all worked there not only produced planning results, but also tended to rapidly developed friendships, because I now have the feeling I have known Mr. Robertson practically all my life.

I can probably add a little to what he has told you about the development of the actual plans for the United Nations Headquarters subsequent to his departure from the Board of Design, for from that time on we have been continually working on the plans, with mainly two objects in view—first, the general refinement and elimination of waste, and secondly, a well-meaning endeavour to cut down the actual cost to cope with the ever-increasing spiral of costs in the U.S.A. and still maintain the buildings with the actual skeleton that was arrived at by the Board of Design. I am happy to say I think we are succeeding in doing that, that the conception which was finally arrived at, unanimously to all outside opinion, has been maintained pretty well intact.





Right: the old and the new. Above: interior court of the new house; architects, William Hamby and George Nelson

The present scene, as far as architectural design and building is concerned in the States is not, as Mr. Robertson has told you, all jam and honey. There are severe shortages there both of materials and of labour. Actually, on the materials side, probably the greatest shortage is that of steel, steel plate, and all its consequent ramifications. Strangely enough, with that steel shortage, you have an almost complete hold-up in the production of doors, because virtually timber is unknown for trim and such fittings as doors and handles. The result is that you have apartment houses now being completed to cope with the tremendous shortage of housing, and the tenants are rushing in, and having to get in to apartments with no doors other than a front door and a door to the bathroom. They are cannily being prevented from making an outcry about this, because they have to sign a lease with a clause in it which says they will not squeal about it.

Another shortage, of course, is that of all door furniture, hinges, screws, etc.—all in very short supply. The latest trend of the working or craftsmanship side, too, seems rather to have deteriorated since Mr. Robertson's departure, because it is now considered that for a first-class bricklayer one is getting an excellent day's work if he lays as many as 250 bricks.

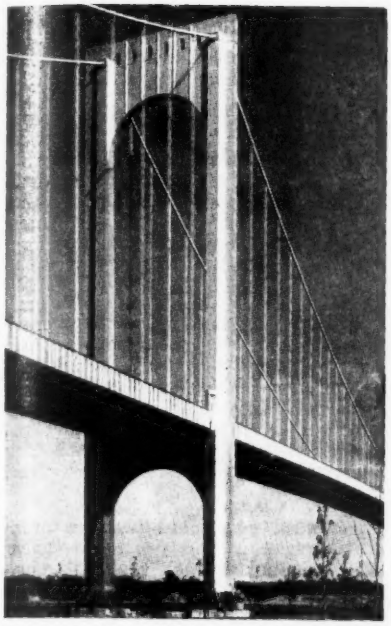
I think those few remarks in amplification of a very interesting talk given us by Mr. Robertson may be of slight interest. Once again, I have very great pleasure in asking you to join with me in expressing a very hearty vote of thanks to Mr. Howard Robertson for his talk.

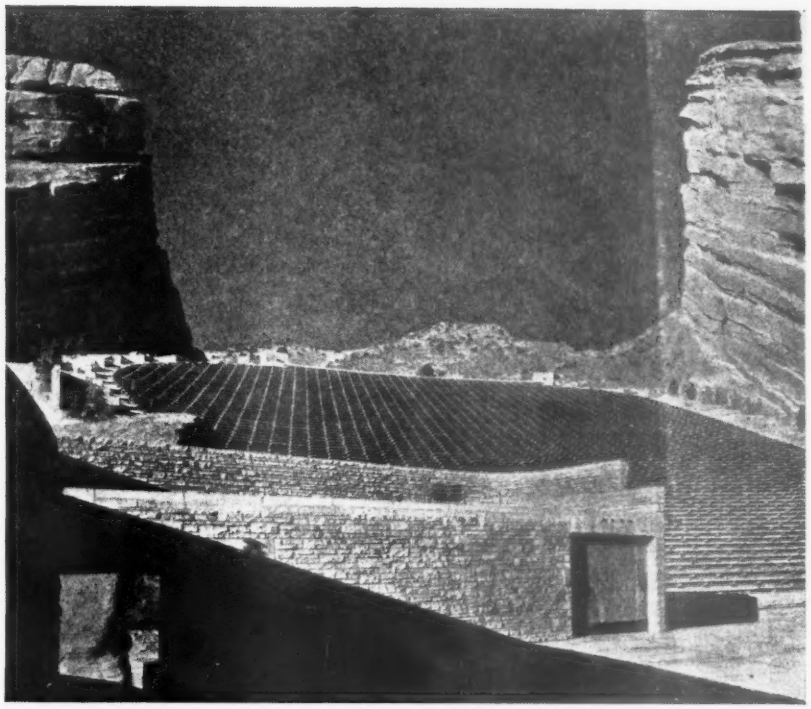
Mr. A. R. F. Anderson [*F*], who seconded the vote of thanks, said: The title of Mr. Howard Robertson's paper attracted me from the first. 'The American Scene' conjured up in my mind vistas of an enormous country with different climates and different peoples, different buildings, full of exciting buildings, and full of bright colour, rather reminiscent of 'Oklahoma' and 'Annie get your gun', rather good, sometimes frivolous in our eyes, but always very efficient.

The substance of Mr. Robertson's talk has strengthened my original ideas, and he has shown us that architecture in America is still a living art, that architects can still design buildings, that they can even get them built, and with great speed and precision. I was astonished at the speed of construction which seems everywhere possible in America. I was there just over a year ago, and I was shown drawings by various architects. Sometimes I was taken on to the sites: sometimes they were just digging the foundations; sometimes the steel was just starting, but on looking through the technical journals in the last year I have seen one after another pictures of all these buildings completed. I am not so sure about the doors now, because I can only see the outside, but apparently complete in all respects, in a matter of 12 or 18 months.

One must not think there are no troubles in building in America. There are a lot of building bye-laws and legislation of all sorts. These are in many cases very stringent, and the codes vary from State to State, but somehow they seem to dispose of these matters very easily, at any rate, without much delay. I have a case in point: the building that Mr. Robertson showed us, in Park Avenue with a frontage of about 200 ft. going up about 21 storeys. When the architects started, they knew there was a proposal for some new zoning regulations, so without much ado they prepared two entirely separate schemes in complete detail —one scheme if the existing regulations were maintained, a second scheme to deal with the problem if the new laws were brought into force. The fact was that the first lot of regulations stayed put: the proposals were defeated and did not become law, so the architects tore up the second scheme, and got on with scheme number one. When I was there, just over a year ago, the steel frame was just going up, and you have seen a photograph of the nearly finished job, now presumably finished.

I agree very much on the shortages of labour and materials. It is quite apparent: I heard a lot about it, but I do not think the problem is anything like of the magnitude of the one that confronts us here, but it does exist.





Above: the Bronx Whitestone bridge; chief engineer, O. H. Ammann; architect, Aymer Embury. Right: Red Rocks Amphitheatre, Colorado; architect, Burnham Hoyt.

The American scene is of course a very pleasant one to the visitor, from a personal point of view, a very comfortable feeling, with lots of pleasant people who go out of their way to make visitors feel at home. I called on many architects without any preamble, arriving on their doorstep and thrusting at them a letter of introduction from the last architect. They all went to extraordinary trouble to show me their drawings, to take me out to see their buildings on the site, and to discuss their various problems. Many of the schemes were very fascinating and on a par with the ones Mr. Robertson has talked about.

I was particularly interested in various points made by Mr. Robertson. One of the early ones that a client seemed to be willing to co-operate in new ideas, fresh thought, was not quite so hidebound as I am afraid we find most of our clients. He also mentioned boldness and eccentricity, and added 'but not likely to be built'. There is an atmosphere of gaiety and hope in an American office which is sadly lacking here at the moment.

Mr. Howard Robertson I met first nearly a quarter of a century ago; I, literally, cap in hand, was a schoolboy going up to see the formidable principal of the A.A. School. He then, as now, had a happy knack of putting people at their ease, and putting before one many important things in a pleasant way. He makes it all seem so right, so logical, so easy. I have the greatest pleasure in seconding the vote of thanks.

Mr. J. M. Austin Smith [*A*]: May I ask a question? Is there an equivalent in America of Local Authority houses? If so, what is the standard?

Mr. Howard Robertson: There is an equivalent, and the standard, as I tried to convey, is mostly rather higher than our own. I think in most cases a great deal of housing is, however, done by the large insurance companies and other finance houses, but some of it is State-aided. It is probably not as fully developed there as it is here on the State-aided house: they have not the same comprehensive regulations.

Miss Gerda Graff: Will Mr. Robertson kindly tell us something about the schools? Are they doing any specially modern things there, for example, classes on the roof?

Mr. Howard Robertson: I have not seen any classes on the roof. They are doing some very fresh design in school buildings, mostly from the point of view, as we are, of light direction, anti-glare, and so on, and air conditioning in schools. There are some quite important experiments in that direction. I do not think they have a great deal to teach us there, except in the direction of ventilation and light. They are using directional light a great deal, to get light to the back of the class rooms. They also have a great deal of shading of their big windows because of intensity of light. I do not imagine the open air idea has gone very far because the climate is grilling in summer in some places, and they are inclined to depend on their air conditioning.

Mr. Frank Scarlett [*F*]: What controls of building are there: are they in any way comparable to the restrictions in this country?

Mr. Howard Robertson: There were controls, I think, mostly lifted now; it is a general scramble, a free for all. The controls were for priority materials, but as soon as they could get rid of them, they did. Mr. Soilleux would correct me, but it is a question of the market, getting what you can, except for some Government-sponsored projects which always go through easily.

Mr. A. B. Grayson [*F*]: I should like to congratulate Mr. Howard Robertson on his talk and accurate description. I had the privilege in the Autumn of travelling extensively in the United States, and I would say he has done us handsomely. I had the privilege of carrying a letter of greeting from the Council of the Royal Institute to the Architects of America. That greeting was kindly received, and reciprocated.

I would like to say a word about schools. I found a lot of interesting things, but in the matter of schools, as in other types of design, I found American architects had very great respect for what had been planned in England. It struck me very forcibly. I met a great many architects, and they told me their eyes had always been turned to Europe and England, in the past, and still were. They understand and appreciate our great difficulties, and were extremely sympathetic, but they thought we had something, particularly in the work of our young people, and in the field of school design.

Miss Marian Shears [*A*]: To hark back to Local Authority housing, where Mr. Robertson said standard was higher than ours, did he mean in construction or in living space? Have they any standards laid down, as we have by the Ministry of Health in our Housing Manual, or are they permitted to build as small or as large as they please? How does the standard of equip-

A dormitory for railroad men, Enola, Pennsylvania; architect, Lester C. Tichy

ment we are turning out today compare with the American?

The only American things we have here are prefabs. To an American, a prefab is for 10 years only, a temporary house, whereas the temporary houses we are turning out have far better workmanship than the American.

Mr. Howard Robertson: I do not know anything about the small prefabricated house. I only saw the apartment buildings, blocks of flats, and there they have a standard. In fact, a great number of architects who built these blocks were given type plans very much like the type plans issued here by the Ministry. Their schedules of accommodation, 900 sq. ft., for example, were laid down, as ours are. I think the accommodation is very similar in space. I think probably what Miss Shears says about the prefab is correct, but they evidently have not taken them quite so seriously and expensively, perhaps, as we have.

As to permanent housing, my impression is that the finish is better, in the matter of floors, and possibly in the elaboration and equipment. They are more comparable, it struck me, to middle-class houses: they have not quite the working-man flavour about them. My admiration for American plumbing is based on the better-class homes where I think they have something on us. I am glad if we also have something on them.

Mr. Martin Buckmaster [*Hon. A*]: I think it would be interesting to know Mr. Howard Robertson's opinion on the New York suicide buildings, and if that type of architecture is likely to be established here.

Mr. Howard Robertson: I do not know whether the questioner means the buildings from which one can conveniently commit suicide, or just tall buildings in general. The condition of tall buildings in New York is brought about by congestion of the site and the fact of the rock foundation. They seem to run to tall buildings, however, in many other cities, and I think they work pretty well. The upper parts of the buildings are very agreeable to inhabit, and are the favourite spots for offices and apartments. Because, as the buildings are zoned back, they recover some of the light and air absent in the early parts of New York.

Mr. Corbusier, of course, wants the Americans to build much higher than they do now, but to space the buildings out much more widely with park land between them. He says the American tall building is a bad thing only because it is not tall enough. My impression is that it suits America, but would not suit us here, because our light values are too bad. They are economic up to a certain height. When they get over about 40 storeys they become much less economic, and although they have advertising value, their efficiency decreases owing to the area occupied by the lifts.

I think the character of New York derives from its skyscrapers. It is also a necessity, and I do not think they have met with much greater problems than we have here with our spread-out system.

Mr. G. E. Carter [*A*]: What sort of calculations are involved on the United Nations site for traffic arrangements, and car parking in general? Has vertical parking been contemplated?

Mr. Howard Robertson: The last scheme I saw was for horizontal parking under the building, for about 1,000 cars. It is a very big site, with a declivity, with a natural path, and they can park underneath horizontally much more easily than vertically on that particular site.

Mr. R. N. Vanes [*F*]: One would expect in these very tall buildings the outer skin to expand and contract due to temperature very much more than the interior of the building, and that there would be a marked difference that might disturb the interior. I wonder if this does in fact occur, and if so, whether the Americans have some ingenious way of overcoming the difficulty.

Mr. Howard Robertson: The expansion and contraction does occur, but they have in their masonry work an expansion joint, a lead joint, every tenth storey. As they build, more or less from floor to floor of their girders, the masonry takes care of itself fairly readily. It is really localized in series. They do have troubles with cracking, but they are a good deal due to swaying. The Empire State building, for instance, moves several inches in a wind, and they have trouble with the cracking of partitions, but surprisingly little when one considers the problem.

Mr. R. L. Jenkins [*A*]: What about American hospitals? Is the extreme vertical treatment better than our horizontal treatment here?

Mr. Howard Robertson: This is a difficult subject. I would say they are thinking more horizontally than they were. If they had the sites they would go in for not more than four or five storeys, rather as we feel here. I think they are rather tired of the completely vertical hospital.

Miss Gerda Graff: Do the women architects specialize in any certain type of building, and how do you think they compare with the women architects we have here?

Mr. Howard Robertson: One or two women architects I have met in the past were married to male architects, or worked with them. There are one or two or perhaps half-a-dozen of great ability. I should think they are no better than ours, but they have more scope. One or two of them have quite large practices, especially out in the West.

Mr. G. A. Carter: The Englishman's main contact with the American scene is through the medium of American magazines, and in fact, that is almost our only contact. They have an enormous field to cover. America is considerably larger than England, and they can only take a few isolated examples to put in their magazines. Do you think their general standard of presentation is subject to bias?

Mr. Howard Robertson: I think the American magazines are very wisely selective. When you look at them, you think everything in America is marvellous, from the FORUM, RECORD, OF PROGRESSIVE ARCHITECTURE. When you go through the American countryside it is not like that at all. There are not many plums in a very huge cake.

Mr. Henry Braddock [*A*]: Does Mr. Robertson think the general overall appreciation of the people of America has a tremendous effect upon the work of the architect in that country, and is missed, perhaps, in this?

Mr. Howard Robertson: That is a terribly difficult question to answer. I think the American educates himself very rapidly, and as someone, I think Cyril Connolly, coming back from America, said, 'the highbrow of today is the middle brow of tomorrow for the American'. I think they are very subject to visual propaganda, and pick it up very quickly. Probably there is a closer inter-reaction between the man in the street and the architect than there is here.

Mr. H. C. Field [*Student*]: Can you tell us more about the employment of the brise soleil, whether it is considered a justified method of relieving a large elevation, also if it is only suitable for a climate where sunshine is more enjoyed than in this country, and whether it can be used in this country to obtain the same relief?

Mr. Howard Robertson: The fixed brise soleil in a form of light framing coming out over the windows is used a great deal because it allows the low evening sun to get in, and shelters the window from the higher sun, but the brise soleil in the Brazilian sense I doubt will have much favour in America, because it is really not adaptable to enormously tall buildings. In a New York skyscraper of 40 storeys, the extremes of climate and wind pressure would play havoc with anything but the strongest apparatus. It has been considered for the United Nations, but I doubt if there is a method which will solve that problem.

Air Hygiene

By T. Bedford, D.Sc., Ph.D.

Read at a Meeting of the R.I.B.A. Architectural Science Board on 23 March 1948. Mr. C. C. Handisyde [*A*] in the Chair

HYGIENE HAS been defined as that branch of knowledge which has to do with the maintenance of health, or, in other words, sanitary science, and I am proposing tonight to include under the term 'air hygiene' those aspects of sanitary science which have to do with the qualities of the air. We are mainly concerned with questions of air pollution by one thing or another.

Perhaps, at the outset, I had better mention the pollution of the outside air of a town. A smoky atmosphere does much damage to the fabric of buildings—and as architects you probably have a lot to say about that—and it is also injurious to health. The ultra-violet light which we receive from the sun is very important; we need ultra-violet light if we are to maintain full health, but in towns with smoky atmospheres the amount of ultra-violet light which reaches ground level is much less than in the open country. Then it has been suggested that there is a relationship between the smokiness of the atmosphere in a town and the number of deaths through pneumonia. I am not sure about the statistical significance of the figures on which that statement has been based. A few papers have been written about the pneumonia death rate in Pittsburg and its relation to the amount of smoke present. However, it has been shown by one of my former colleagues of the Medical Research Council's Scientific staff, Dr. Russell, that in this country, in cold and foggy weather, there is a significant increase in the number of deaths from respiratory diseases. It is the sum total of the smoke from domestic fires which makes up the bulk of the smoke in our towns, so to get over that trouble the more one can use smokeless fuel the better.

Now I am going to turn to occupied buildings with which we are primarily concerned this evening. What are the changes in the atmosphere of a building brought about by occupation? The first and most obvious result is that since we are all consuming some of the oxygen in the air and exhaling carbon dioxide, the concentration of oxygen in the air of the building is slightly lower than that outside, while the inside air is richer in carbon dioxide. In some peculiar situations, such as in submarines or other sealed compartments, that can be a matter of great importance, but in ordinary buildings, in usual conditions of occupation, one is never likely to meet trouble on that account. A building is badly ventilated if the carbon dioxide reaches a concentration of about a half of 1 per cent. The concentration in the external air is about .03 or .04 per cent. No physiological effect from an excess of carbon dioxide will be noticed until the concentration reaches about 2 or 3 per cent, and then the only effect will be to cause a slight increase in the depth and frequency of respiration. Unless one is working fairly hard that will not matter very much.

Organic substances are given off from the body and soiled clothing, and these give the characteristic crowd smell or body odour about which people have written so much. Heat and water vapour are given off from the living body. Bacteria are also emitted, and some of these are responsible for the spread of disease. The electrical state of the atmosphere is also altered, the number of ions in the air being reduced. Further, in many industrial processes harmful gases, vapours and dusts are given off. There is some evidence that body odours may be harmful as well as unpleasant. In two studies made in the United States it was proved experimentally that exposure for long periods either to the odours of people's bodies or to the organic smell from heated house dust reduced the appetite for food. In one of the experiments, at any rate, precautions were taken to keep the temperature, atmospheric humidity and the speed of air movement constant, yet there was a statistically significant difference in the amount of food eaten. Even apart from any effect on appetite, unpleasant odours should be avoided. In point of fact, for practically one hundred years past nearly all the standards of fresh air supply for occupied buildings which have been put forward have been based on the amount of fresh air required to reduce body odours to an imperceptible or barely perceptible level. Perhaps that is not a very scientific way of going on, and one might have hoped that there would have been some better basis for ventilation standards. Perhaps it will later be possible to recommend standards in terms of bacterial contamination.

The human body must give off the heat which it produces, and in designing any system of heating the heating engineer takes into account the heat production of the occupants. In some situations in industry, and in ships of war, the removal of excess heat is a very important function of the ventilating system. I mentioned the fact that the ionic content of the air is affected by occupation. It has been said that such changes in the electrical state of the atmosphere may exert a profound influence on comfort and, indeed, on health. Some German workers several years ago concluded that an excess of positive ions made people uncomfortable, that it increased their blood pressure to unpleasant heights and generally caused discomfort. On the other hand, negative ions were said to make people feel much refreshed. Careful tests were undertaken in America to check these findings. On the whole, the results were negative, and I think we can conclude that in the present state of our knowledge there is no evidence to justify the use of an ionization plant as an adjunct to a ventilation system.

Industrial dusts vary very much in their effect. There are some dusts, those, for instance of lead and T.N.T., which cause general systemic poisoning. Some other dusts, such as tetryl, an explosive, may cause serious dermatitis. Then there are dusts containing free silica which, when inhaled, may cause chronic lung disease. Examples of such disease are the silicosis of the metal miner, the potter, or the grinder, and an allied disease which has been named the pneumokoniosis (or dusty lung) of coal workers. This disease is particularly prevalent in the anthracite mines of South Wales. Airborne dusts vary greatly in the size of their particles. In a dust cloud in an anthracite mine there may be a few particles as large as 50 microns in diameter. A micron is one-thousandth of a millimetre, or a twenty-five thousandth part of an inch, so that 50 microns is about one five hundredth part of an inch. At the other end of the scale there are quite a number of particles smaller even than one-quarter of a micron; that is, one one-hundred-thousandth part of an inch. Large numbers of particles in some types of dust are of that size. Such very fine particles take a long time to settle out of the air once they are disseminated.

In the production of chronic lung diseases, it is the very fine particles which are most dangerous. Large particles tend to impinge against the air tubes leading down into the lung, and to lodge on the moist membranes lining the tubes, and then finger-like processes on the membranes sweep them back to the larynx whence they are coughed up. The very small particles, however, may reach the minute sacs at the end of the air tubes, and from there they cannot be removed by coughing. One may be exposed to dust for several years before becoming incapacitated, but there have been instances in which much shorter exposure has been fatal. Any method of dust control must be capable of dealing with the very fine particles which are invisible to the naked eye, as well as of looking after the larger and visible particles. When dealing with dangerous dusts, it does not follow that because the air looks clean it is clean.

Now let us turn to the question of respiratory infection. For many years it was thought that respiratory diseases were carried almost wholly by direct droplet infection. In speaking forcibly, sneezing or coughing we spray out tiny liquid droplets into the air, and many of these droplets may be carrying pathogenic organisms. Direct exposure to a cough or sneeze may result in a massive dose of infective material. Some of the droplets which are discharged during coughing or sneezing are relatively large and readily fall to the floor; but even then the organism in those droplets may become attached to dust particles which may be redisturbed on the floor being swept, or by a draught. Many of the particles which are coughed out are of small diameter, and they can remain floating in the air for a considerable time.

Organisms sprayed into the air in the basement of a building have later been recovered on the third or fourth floor building, whither they have been carried in the air.

In recent years a great emphasis has been laid on the importance of the aerial spread of infection. A great deal of work has been done in measuring the bacterial contamination of the air in various situations and in studying different methods of air sterilization. The handkerchief can be another factor in the spread of infection. When a handkerchief has once been used and then allowed to dry and is then shaken, particles are thrown off which carry organisms. A good flourish of a handkerchief may discharge many thousands of organisms into the air, and some of these may be disease-producing organisms. Therefore, the person who has a cold and brings out his handkerchief with a mighty flourish is a menace to his neighbours.

Now I must say something about the control of air purity. The best method of control of the purity of air in buildings, except in special circumstances, is undoubtedly by adequate general ventilation. The external air is commonly clean, except for smuts in some of the busy towns, and it is refreshing to have a copious amount of fresh air entering well-designed open windows. Ventilation should be such as to maintain comfortable warmth and a reasonable degree of air movement; and there should be enough to keep down body odours and bacterial contamination to satisfactory levels. Later it may be possible to prescribe the desirable amount of ventilation in terms of the amount of fresh air which is necessary to keep a desirably low level of bacterial contamination, but at the moment it is perhaps too early to be dogmatic about that.

The protection of the industrial worker from dust and fumes should not have to depend on general ventilation. A noxious material which is being used in industrial processes should not, if it can possibly be avoided, be allowed to escape into the general atmosphere. The best precaution is to use a harmless material instead of a dangerous one if that can be contrived. Failing a suitable substitute, it should be ascertained whether the dangerous process can be totally enclosed, so that there is no leakage of poisonous fumes or gases into the external air. Frequently that is not possible because the material has to be worked on by an operator. For example, in metal grinding, the operator must apply the metal to the wheel, and total enclosure of the process is impracticable. In such instances local exhaust ventilation must be contrived. In some processes even that is not possible, and then it will probably be necessary to rely on rapid general ventilation. In aircraft doping rooms, for instance, very rapid ventilation has been required to remove the toxic vapours given off by the doping compound. Finally, if the problem cannot be solved even by good general ventilation, one may be driven to provide the workers with some kind of respirator or face mask. However, I hold the view strongly that the wearing of a respirator at work is commonly a confession of failure on the part of somebody to cope adequately with the health hazard.

In a local exhaust dust removal system the air is drawn into a duct and conveyed through that duct by power along to some separating device, and usually this dust separator is out-of-doors so that the air is discharged and sent away to waste. I want to enumerate some of the principles that should be followed in the design of a dust exhaust system. The exhaust hood should be so shaped and located as to operate with the minimum velocity requirement. Clearly it is a matter of economy not to have higher air velocities than are needed. A decision as to the proper location and the exact shape of the hood can be made by studying the nature of the work which is to be carried on, the characteristics of dust production, the way in which the dust particles are dispersed at the point of generation, and the particle size of the dust which can be expected from that particular type of work. Clearly the hood should be placed as closely as possible to the point of dust generation. There is a good deal to be done with regard to the design of the hood so that the velocity is as nearly as possible uniform over the whole area of the hood opening. Some study has been made of this question, and in some publications velocity contours for certain types of openings are to be found, but more work is needed. The velocity at the hood should be sufficient to guide the particles into the hood, regardless of the way in which they are being thrown off at the point of production, and they must be carried into the duct. Within the exhaust duct there must be the necessary velocity to carry the particles right along to the dust collecting device. The velocity which is necessary will depend on the size of the dust particles and their density. Duct speeds may be required varying from about 2,000 to 5,000 linear feet per minute. The ducts themselves should be straight and well supported, and any dead ends should be capped to allow cleaning and inspection. Branch pipes should join the duct at acute angles; there should be a suitable radius at any necessary bends. Any change in pipe size should be made with adequate tapering.

Now consider dust collection. There are various ways in which dust can be separated from the air. Probably all of you are conversant with the cyclone separators which one often sees outside factory buildings. When these have to deal with large particles they seem to work satisfactorily; but their efficiency for the collection of small particles is low. What can be a highly efficient form of dust separator is the electrostatic precipitator. That is used where the dust has a fairly high commercial value and, in some cases, where particularly toxic materials are to be dealt with. I believe the cost of the electrostatic precipitator is not light, and I do not think it is likely to be generally used in connection with dust extraction systems. In many instances cloth bag filters have been used. If one of these bags has been used for some time it is fairly efficient, even for relatively small particles; but by that time the fabric has become clogged by dust and its resistance to the flow of air is considerable. On the other hand, when the bag is new, it will have a good action so far as large particles are concerned, but will let small particles pass. That may not matter so much if the dust separator is outside, so that the fine material, which is not likely to cause an obvious nuisance, can be dispersed into the free air.

An important point in connection with local exhaust ventilation is that in factories where many machines require exhaust arrangements, as in some grinding shops, the amount of air removed by the local exhaust system can be so large as to be a severe tax on the heating system. In recent years there has been a tendency to try to get the dust separation device inside the building so that the air can be re-circulated and heat thus conserved. It was said in one useful American official report about 16 or 17 years ago that the cloth bag filter was so efficient as to permit of this, and I believe that in America a number of dust separation installations have been put inside factories. A few months ago, however, I read an account of some work done in the United States with these cloth bag filters. It was found that practically all the filters tested were not efficient for small particles, and it was said that they should not be placed inside buildings.

I have with me a specimen of the material of another kind of filter, about which I do not think much has been published. It is wool wadding which has been treated with resin. This was developed as a method of removing toxic smoke from contaminated air, especially in gas warfare. It is manufactured by the Cape Asbestos Company, but as far as I can gather it is not at the moment in production. The wool wadding is treated in such a way that minute particles of resin are interspersed among the wool fibres, and as they are deposited they are given an electrostatic charge. If this wool-resin filter is used for the filtration of dirty air, the wool fibre itself will exert a sieving action and take out large particles of dust, while the finer dust particles will be attracted and held fast by the electrostatically charged resin particles. It is a novel arrangement and has the virtue of having a low air resistance, so that excessive fan power is not needed to pull air through the filter. With a resistance of .8 of an inch water gauge a collecting efficiency of 99 per cent or more is claimed. If these filters are kept dry they seem to go on for years without deterioration except, of course, that if they are filtering dirty air they will ultimately become clogged by dirt and have to be cast away and renewed. It seems to me that with this type of material it may be possible safely to re-circulate air from dust exhaust systems, but that is merely a personal guess, and careful trials would be necessary to establish the safety of such a procedure.

For the reduction of the bacterial content of the air a free supply of fresh outside air is probably the best thing, if it can be con-

trived without making the building too chilly or too draughty. Fresh outside air, especially if it is taken from well above ground level, contains very few bacteria. If good general ventilation cannot be contrived, then in special cases some other methods may have to be attempted for reducing the number of airborne bacteria. One method is to use a suitable filter, and again I think that probably this wool-resin filter offers the best possibilities.

In trying to keep down the bacterial contamination of the air by means of filtration it is desirable to pass as large a volume of air through the filter as possible —the more rapid the air turnover through the filter the better. The air washer of an air-conditioning plant can remove a number of organisms also, but the washer water should be constantly renewed. Sunlight is a good disinfecting agent due to the ultra-violet light which it contains. The most effective wavelength for bacterial purposes is one of 2,537 Angstrom units. Ultra-violet lamps can be obtained which will give a radiation of that wavelength, and there is ample proof that by using these lamps in a proper manner the bacterial content of the air of a room can be substantially reduced.

Care is needed that persons are not exposed to excessive irradiation, for too much ultra-violet light is harmful. Hence, when ultra-violet light is used for air sterilization in buildings, the lamps should be screened so that the direct radiation from the lamps does not reach the occupants. It is worth bearing in mind also that there is much reflection of ultra-violet light from ceilings and other surfaces. For an exposure of seven hours a day the maximum safe intensity of ultra-violet radiation is about a half of a micro-watt per square centimetre. For those who may have 24 hours a day exposure, for instance patients in a hospital ward, about one-tenth of a micro-watt is the maximum desirable. In using ultra-violet light for air sterilization the best advantage is gained if the humidity of the air is very low. A high atmospheric humidity militates against the efficacy of ultra-violet light as a bactericide. As the humidity increases from 30 per cent to 70 per cent the lethal power declines by one-half, or, in some instances, considerably more than that.

It is very necessary to get a good circulation of air past the lamps and in close proximity to them, so that for a short time the organisms are exposed to radiation of high intensity. It many buildings in winter time there is such good circulation owing to the convective effect of heating appliances, such as hot water radiators. But in summer, when there is not much difference between the temperatures of various surfaces, the vertical circulation may be much less. On the other hand, in summer it is much more easy to get lavish ventilation, and under those conditions there may be little need to bother about air sterilization.

Another application of ultra-violet light is that instead of trying to disinfect the air of whole compartments, in some hospitals ultra-violet light barriers have been used to separate cubicles, and thus prevent cross-infection within a ward. Lamps are suspended from the ceiling sending an intense beam of radiation down to floor level. If they are to be successful, there must be a low air velocity in the neighbourhood of the barriers so that the air passes slowly and gives a long enough exposure to the radiation.

Chemical agents have been used for air sterilization with good results. Ozone has been tried, but it is not very satisfactory. I referred to this when I had the pleasure of speaking to you before, but I will recapitulate quickly. Ozone can be a powerful irritant poison in excessive doses. Most people can sense the presence of ozone in the air when its concentration is only about .015 of a part per million parts of air, and some sensitive people can spot it when the concentration is only .010 part per million. The maximum permissible concentration of ozone in a room which is to be occupied for a long period is .04 of a part per million, which is, as you will notice, only approximately three times the detectable figure. If isolated organisms from a clean culture are sprayed into the air of a room, a reasonable killing rate can be achieved with that maximum permissible concentration of .04 of a part per million, but, unfortunately, the organisms which spread respiratory infections have been sent out from the mouth or nose and they are coated with organic material which tends to protect them. When organisms so coated are sprayed into the air, ozone at the maximum permissible concentration exerts no useful effect.

Another difficulty is that it is very hard to maintain a precise concentration of ozone in the air. The rate of liberation of ozone can be controlled fairly accurately, but its concentration in the atmosphere depends not only on changes in ventilation rate, but also on changes in humidity, so that with the same rate of generation of ozone you have different concentrations according as the air is dry or humid. Another substance which has been used is sodium hypochlorite. It can be used by spraying a diluted form of a commercial solution of hypochlorite, or some other preparation using bleaching powder. Exposed to the air, the hypochlorite gives off hypochlorous acid gas, and it is apparently the hypochlorous acid gas which is the killing agent. It is highly effective in concentrations which are not objectionable, but there is a risk of damage to fabrics and metals, especially if droplets of the solution are present in the air. Hence it should be used with caution.

There are many organic compounds which have been used as air disinfectants. Much has been done with propylene glycol and triethylene glycol in this connection, and some of my colleagues have used lactic acid and a whole batch of other organic acids typical of which is one called α methyl α hydroxy-butyric acid. These organic substances appear to act not in the vapour phase, but by condensing on the bacteria, or on the bacteria plus dust particles, which are floating about in the air. When condensation takes place there is a high concentration of the disinfectant liquid on the surface of the dust particle, or of the free organism. Whereas with ultra-violet light a low humidity is desirable, with these organic chemical substances a fairly high humidity is required. Preferably the relative humidity should be between 60 and 80 per cent, and with most of them about 70 per cent seems to give the best results. At a lower humidity there is a substantial falling off.

Let us just consider α methyl α hydroxy-butyric acid. The effective concentration in the air of this substance is only about one milligramme per cubic foot, and 70 per cent is the desirable relative humidity. Even if the humidity is as low as 50 per cent—and that, by the way, is roughly the average humidity which we found in large numbers of observations taken in factories in the winter months—the killing rate is equivalent to a ventilation rate of 25 air changes per hour. With organisms freshly sprayed from the mouth that concentration of the acid will bring about a reduction of 90 per cent in the number of organisms present in the air within five minutes. Apparently this substance has no systemic toxicity. So far as one can conjecture from the behaviour of other allied substances, there is no reason to expect that it will be harmful in the concentration used, and some animal experiments confirm this view.

At a concentration of .1 milligramme per cubic foot the acid is a non-irritant, but if the concentration is increased to three times that figure some irritation is felt. The substance can be vaporized at the boiling point of water, but a useful feature is that it can readily be vaporized at room temperature, for instance, from the surface of impregnated tissue paper, or from cardboard tubes which have been coated with the solid acid. To get the necessary aerial concentration for bactericidal effect, it is necessary for a sufficiently large surface to be exposed with a sufficient flow of air over it; but that should not be difficult to contrive. If the vaporizer is used then a rapid movement of air is necessary over it so as to dispel the vapours, otherwise they will be cooled and condensed, resulting in a deposition of substance on the ceiling or on the wall. The Americans have used heated vaporizers for triethylene glycol. These have been put in the supply ducts of ventilation systems and the vapour production very carefully controlled. They worked very well on the whole, but there were some difficulties, one being that changes in the weather caused variability in the concentration maintained.

Earlier, I mentioned bacteria which fall to the ground and become attached to dust particles, which may later be redistributed. Whether a chemical disinfectant or ultra-violet light is used, dust-borne organisms are much less easily killed than single isolated organisms. An obvious reason is that a bacterium is screened from ultra-violet light by the dust particle to which it is attached, and the efficacy of a chemical

disinfectant depends on the size of the particle which has to be impregnated by the disinfectant. Much has been achieved by treating floor surfaces with oil. Spindle oil has been used in some experiments with striking results. Whereas when an untreated floor is swept the bacterial count may be 800 particles per cubic foot, with an oil treated floor it might be possible to reduce the count to about ten particles.

There are some purposes for which it is desirable to keep the air as sterile as possible. One instance is the manufacture of certain medical preparations. Then much can be achieved by the use of chemical agents, especially if the concentration of disinfectant is high enough to cause slight irritation. Quite often the places where this is desirable have few occupants.

Operating theatres present a special case. In an operating theatre it is necessary to have good ventilation with clean air. The air must be tempered as it comes in, and it is desirable that it should enter at low velocity in order not to disturb dust, and for the same reason it should not pass along the floor, and then rise to breathing level. It is better to bring the air in at ceiling level and extract it at floor level. If necessary chemical agents can be used for disinfection, but if the intake of the fan system is at roof level, if the theatre is kept free from dust, and if a plenum system is used so that the air in the room is maintained at a slight positive pressure and the influx of dust from the corridors when the doors of the theatre are opened is thus prevented, the air within the theatre should be kept clean.

There is very clear proof of our ability to get a substantial reduction in the bacterial count in the air by the various methods which have been described; but what is the effect on health? It does not follow that because the concentration of organisms in the air is halved the incidence of respiratory disease will also be halved. We do not know that the relationship between the bacterial count and the incidence of disease is a linear one. Further, in considering the aerial disinfection of workplaces we must remember that people are only there for a fraction of the day.

I have been talking primarily about truly airborne infection where the infective particles are circulated with the air, but I mentioned at the outset that there may also be direct droplet infection. In different circumstances one or other of these may be the predominant factor in the spread of infection. An experiment is reported which was carried out in some barracks of the United States Army Air Force. Two sets of barrack rooms were included in the study, and their occupants—two groups of airmen—were found, during an initial period, to have sickness rates which were very nearly identical. In one set of rooms were then installed vaporizers for the discharge of triethylene glycol, and during a further ten-week period—from January until April—the sickness rate in the test rooms where the chemical agent was distributed was only 54 per cent of that in the other rooms.

Some other trials were made of ultra-violet radiation in American schools during the period of an epidemic, but with not quite such good results. In the schools which were controlled there was a sudden high peak of sickness when the absenteeism rate was extremely high, but then the children recovered and things went on fairly normally. In the irradiated schools, however, there was no such high peak, but, instead, throughout a considerably longer period children kept going down with the illness. In the two groups of schools there was no significant difference between the sickness rates for the term as a whole.

It may interest you to know that some trials with ultra-violet radiation in schools are going on in this country. The Medical Research Council, with the co-operation of the Ministry of Health, are carrying out some trials in a group of elementary schools at Southall. In some schools all the rooms are being irradiated in up to maximum safe intensity, while in other schools the rooms are not being treated, and these latter serve as controls. In all these schools careful observations are being made of the bacterial contamination of the air, of the temperature, humidity, speed of air movement, and ventilation rate, and the vertical circulation rate is being assessed. All absences from school are being accounted for, and a very careful study is being made. The experiment has been running for some months, but it will be a considerable time before the results are available.

DISCUSSION

Mr. H. V. Lobb [*F*] said that when he was asked to open the discussion, it had not occurred to him that there was so much in the subject of air hygiene, and the wide publicity which the paper would doubtless receive in the technical press would be welcomed.

A few hours previously he was in a boat on the Solent when he happened to notice a large liner which was flying the quarantine flag. He was informed that there was a case of smallpox on board, and that had started him thinking about disease in Britain, and how such things as typhoid and cholera had been banished by the control of water. He also thought how fine it would be if the common cold could be banished from the country. The author had given some lead in connection with that problem, and if the cold could be banished many millions of pounds would be saved by the country every year.

The author referred to carbon dioxide, and it would be very interesting to know whether the concentration of that gas given off by the refrigerator in the prefabricated house kitchen unit when the room was shut up over night was likely to exceed a half of 1 per cent, and whether carbon dioxide or carbon monoxide was heavier than air. It would also be very useful to know whether air bricks should be put in to overcome that at ground level or at a high level.

He could speak with some knowledge on the effect of constant changes of air on factory workers. During the war a certain firm were told to augment their factory space, and they were moved into a building which had no windows but where air change was constant and very accurately controlled. There were something like six and a half air changes every hour. There was an air washer, pre-heaters, and things of that sort, and the air was accurately controlled so far as temperature and humidity were concerned. At first there was a certain amount of criticism by the workers about having to work in a factory which had no windows and sunlight, but after a period of about six months they were rather staggered to find that there had been a complete absence of colds, whereas those working in the parent factory caught colds. He persuaded the management to keep a record of absentees in the two factories among people in similar occupations and of similar ages, and it was found that in the factory where the air was controlled there was something like 50 per cent less absenteeism due to normal colds. That was probably due to the absence of the human element which often asserted itself in factories, where one man wanted the window open and another man wanted it shut, resulting in no control at all over air change.

Finally, he desired to know whether marble dust had any injurious effect. He was on a job recently where men were working on a marble staircase with rotary grinders, and the air was thick with dust. Although all the windows and doors were open, the man operating the machine had, of course, to wear a respirator. Also it would be interesting to know whether dust bacteria grew more rapidly in a smoky atmosphere.

Dr. Bedford, in reply, said that with regard to the question concerning the gas refrigerator, coal gas contained a high proportion (it varied with different gas supply companies) of carbon monoxide, probably something of the order of 10 to 20 per cent, which was a deadly poison. If combustion were complete—as it should be in any good gas appliance—then there should be no trouble, unless there were contamination of the atmosphere to cause a shortness of breath, and that should never occur in an ordinary room. A danger was that in some appliances which were no longer in perfect condition there might be incomplete combustion. For instance, if on a cheap gas ring there was a big pan of cold water with the gas flaring against it, at the point of contact the gas might be cooled below its ignition point and it might not burn, so that unburnt carbon monoxide might escape. If a refrigerator were working as it should do, then the amount of carbon dioxide was small and should cause no trouble. If there were a leakage there might be danger from carbon monoxide.

There did not seem to be any need to bother about carbon dioxide in ventilation problems, and if it were desired to put in air bricks, he suggested that they should be put in for general ventilation purposes rather than for guarding against carbon

dioxide alone. Carbon dioxide was slightly heavier than air, and if it behaved as a liquid, it would tend to sink; but gases diffused one into another, and a striking difference was not likely to be found between the concentration of carbon dioxide at floor level and that at ceiling level in an occupied room.

The account of the windowless factory was interesting. Six and a half changes per hour for most conditions was quite good ventilation, and it might be that in the older factory with which the new factory was compared the ventilation rate was lower. In his view it would not be due to the effect of the air conditioning system, as an air conditioning system, regardless of the quantity of fresh air, that less colds occurred amongst workers. The best piece of evidence of which he knew concerning air conditioning and its effect on health came from America. The Metropolitan Life Assurance Company of America, which had a skyscraper in New York, desired to extend its premises, so another skyscraper of similar size just across the street was built, and into that building there was put a complete air conditioning system. Having installed that system, the management decided to see whether it would influence the health of the company's employees working there, and a very careful note was taken of all absences through sickness in the two buildings. There was no pre-selection with regard to the people who worked in one or the other building. There was found no significant difference between the sickness experience of the occupants of the two buildings.

So far as the lack of windows was concerned, his colleague, Mr. Weston, had some experience in that connection with war factories, and his firm view was that windowless factories were inexcusable, except for special war purposes. It was much better that people should be able, as they glanced up from their work, to see outside, and see the daylight and possibly the sunlight coming in. There was a tendency otherwise to feel that they were being deprived of something unnecessarily. He urged those who designed factories not to make them windowless unless there was a very good reason why they should not have windows.

With regard to the question as to whether marble dust was injurious, pure marble consisted of calcium carbonate, and contained no silica, therefore it would not cause silicosis. It had, in the past, been regarded as relatively harmless, but it had to be borne in mind that any dust in quantity should be avoided if possible.

Mr. H. G. Goddard [*F*] said that it was particularly salutory when one's pet ideas were shot down as his had been. The sleepiness which crept over many people when listening to a lecture after lunch was, so he understood, due to lack of oxygen, but it now transpired that that was not the case. It would be interesting to know what it was due to, because it had always seemed to be analogous to the sleepiness one felt when flying at high altitudes.

With regard to the question concerning carbon monoxide, in convection heating systems the air was largely heated by some sort of stove or boiler, and by a flue which led up from it. In most cases those flues were made either of steel, which was likely to corrode, or cast-iron, which was likely to crack, and sooner or later it would appear that a discharge into the bedroom would occur of flue gases. It would, therefore, be interesting to hear the author's remarks on the possibility of those gases being lethal or unpleasant.

Another interesting question concerned heat loss where air had to be extracted for the purpose of removing dust. He had been very interested to see in Switzerland an installation of heat exchanges for preheating incoming air by passing it through a heat exchanger which was heated by the outgoing air.

He was experimenting with a device which it was hoped would destroy a certain number of bacteria by passing the air through a series of gauzes heated by the passage of an electric current to a fairly high temperature, and he wondered whether the author would express a view as to its chances of success or otherwise.

Dr. Bedford, in reply, said with regard to the question of sleepiness in the crowded lecture room, he would not like to say that oxygen had nothing to do with it, but it was not a question of lack of oxygen in the atmosphere. If it concerned oxygen at all, it was probably because the person involved had been breathing shallowly. It was more probable that if it were a crowded room the temperature was too high. If the meeting hall were just about comfortable at the start, the presence of many persons would cause the temperature to rise quickly, and it was the resulting high temperature and high humidity which probably caused the trouble.

On the question of carbon monoxide from flues, he did not know whether the pipes were likely to crack or not, and he did not know what size of crack was necessary to allow an appreciable quantity of flue gas to escape into the stream of air which was being used for ventilation. It was conceivable that in some cases there might be too much carbon monoxide. It was difficult to say how much one got from an open fire, but from closed stoves there was often some carbon monoxide given off with the flue gases, and if the dampers had been throttled down to conserve fuel there might be some escape into the room, especially if the flue were dirty.

With regard to the sterilization of air by hot gauzes, that would be a matter of how hot the air was rendered by its passage through the gauzes, and whether the bacteria could be raised to a killing temperature. Whether the hot gauzes would give sufficient contact and a sufficiently high temperature, it was difficult to say.

Mr. M. Hartland Thomas [*F*] referred to fluorescent lighting and asked whether any ultra-violet light which was not caught by the fluorescent material got by into the eyes and, if so, whether that was likely to have a damaging effect if one lived in unscreened fluorescent lighting over long periods.

Dr. Bedford, in reply, said that fluorescent lighting was not within his province, and all he knew about it was that which he had learned in conversation with his colleague. Very little ultra-violet light got through the tube, and the fluorescent material would tend to catch it. So the chances of any serious amount getting through would appear to be very slight. Measurements had been made, and he thought it was correct to say that there was no danger.

Mr. A. Pott [*A*] said he would like to know a little more about the question of transmission of ultra-violet light through ordinary glass. He was particularly interested because his attention had been drawn to some work by Professor Garrard on the question of an increase in bacteria in hospitals when wards were blacked out. That increase in bacteria was attributed to lack of daylight.

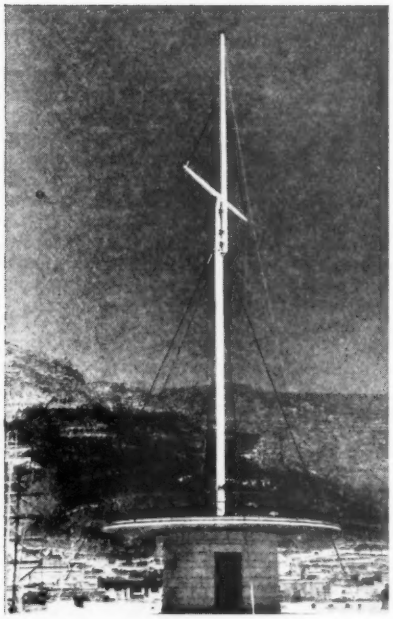
Dr. Bedford, in reply, said he could not give any definite transmission figure for ordinary glass. As to Professor Garrard's work, it was probable that the conclusion was that it was not only ultra-violet light which killed but that ordinary daylight could have some bactericidal action, although perhaps not so dramatic as ultra-violet light. At some distance from windows there was little chance of much ultra-violet light getting through.

On the question of sickness and ventilation, there was some evidence that ventilation did do something. There was not much statistical evidence about it, but there were two pieces of evidence as a result of some factory investigation carried out over twenty years ago, the first of which was that relatively minor changes in temperature could upset people.

A large factory had been chosen at which something like 1,000 women and girls were employed in half a dozen different shops. All except two of the shops were maintained at more or less the same temperature as each other in winter and summer, and all of those shops had a low sickness rate. One shop was comfortable in the summer, but the heating system was inadequate, and in that shop there was a distinct increase in sickness in the cold months. The other shop was comfortable in the winter, but overheated in the summer, and that, too, had an increase in the sickness rate. In another large factory building there were two rooms in which girls did identical work, but one of those rooms had a sickness rate of nearly twice as much as the other. It was true that the rate was not high, but it was curious that in the room which had the lower sickness rate there was a better mechanical system of ventilation than in the other, and the natural ventilation was better also. The reason was that in the room which had the higher sickness rate the windows faced on to other tall buildings, and the free effect of the wind was missing.

Building at the Cape of Good Hope

By D. R. Harper, B.Arch., Ph.D., A.M.T.P.I. [*F*]



Signalling base, Cape Town

MUCH ATTENTION is focused upon South Africa at the present time, and architects who have had an opportunity of viewing the South Africa Exhibition at the Academy Hall in Oxford Street will have seen an attractive picture of the general character of the country and its people. Against this background some of the problems of building may be visualized more clearly. The war has had a very profound effect upon the architect's problem and though we have not suffered the crippling effect of bombing and the enormous deficit of building which this has caused in Britain, most of the other problems of the immediate post-war period have their counterpart in South Africa.

As the country organized its war effort, many architects voluntarily left their practices and official positions and in due time found themselves in the fighting services in North Africa, or playing a vital part in the building of aerodromes, hospitals, camps and all the other needs of a country unprepared for war. Those who remained to carry on work on essential civilian services increasingly found themselves in nearly overwhelming difficulties of controls, shortages and rising costs. In due time, many were able to return to their pre-war occupations, and offices are now re-established with much work to do. There must be over 600 students of architecture at present training in full-time schools.

Regional Conditions

From many points of view, South Africa tends to subdivide into broadly defined regions and the characteristics of the Cape are influenced by the fact that it lies in a relatively small area of predominantly winter rainfall. The building problem is much affected by this fact and the comments which follow, therefore, refer primarily to this western Cape region.

In Cape Town and its suburbs on the slopes of the mountains and on hill slopes elsewhere, sites usually tend to be difficult in contour and have treacherous clay foundations. Elsewhere, in the flatter land, sites are frequently sandy and badly drained during the winter. Knowledge of the problems of soil mechanics and foundation movements is only now being accumulated.

The movement, in the spring, of a centre of high barometric pressure northwards from the Antarctic ocean to a position over the land north of the Cape, results in the development of very characteristic winds, predominantly dry south-east winds in the summer falling away in strength towards the autumn, and periodic and strong winds from the north-west in the winter bringing rainstorms with them. The rain can be torrential and backed by a strong wind, is frequently driven horizontal and with great force against the walls and roofs of buildings. The topography has, however, a great effect upon exposure and upon the annual rainfall. Newlands, a suburb of Cape Town, for example, is little affected by the S.E. summer wind but receives over 60 in. of rain per year, whereas Salt River five miles away is very exposed to wind, but averages less than 25 in. rainfall per year.

Warm to very sunny summers with frequent gusty winds, cool and sometimes cloudy, wet or stormy winters during the period end of June to the end of September roughly sums up the conditions. The summer temperatures frequently exceed 90 degrees F. and the winter temperatures rarely drop below 38 degrees F. except on the higher ground of the mountains. Frost therefore is not a problem of building, but on the other hand, the dull and wet days can be uncomfortably cold, and some form of heating is necessary in the winter months. Radiant sun heat received on both vertical and horizontal surfaces is very severe and temperature movements are very pronounced, causing frequent cracking and subsequent leakage.

The Traditions

The early architecture of the Cape, developed by the first Dutch settlers on their farmhouses relied upon thick walls built with partially burnt bricks, lime rendered, and thatch roofs, to meet these problems of climate. The plans usually allowed for a degree of cross ventilation by means of tall windows in the relatively high rooms, and at the same time created secluded out-door spaces further shaded by trees and trellises. Such examples of this fine architecture as remain are among South Africa's cherished possessions and the contributions on plan and section are still valid, but the more superficial features—gable, moulded doorways, tall sash windows and others—are wholly inapplicable and incongruous applied to the modern railway station or public buildings, or, for that matter, to the smaller suburban house now inevitably resulting from the increased costs of sites and buildings.

No other tradition has particularly captured the imagination of the South Africans although some examples of an elegant 18th century architecture exist in the Cape, and any signs of the 19th century revivals are obviously mere echoes of the moral struggles in England without much force or conviction. In these circumstances, and certainly by now, the South African as a client, accepts the principles of modern architecture and the results without much misgiving even if with little critical judgement. In the earlier developments of the 20th century architecture, the South African architects were much influenced by American work, but this influence, though still strong, is being modified by a real appreciation of the opportunities as well as the problems which the characteristics of the region provide, an appreciation which is being encouraged and fostered by the School of Architecture and assisted materially by the competence of the structural engineers.

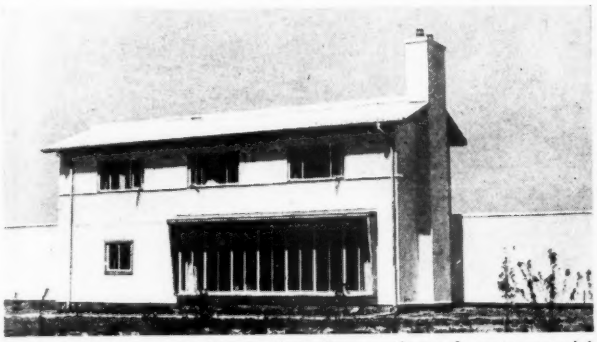
Building Forms and Materials

The problems set by climate are best solved by the adoption of a simple roof form projecting over the walls with generous eaves in order to give protection to the walls. The measure of this protection from sun heat and rain, of course, depends upon the height of the wall, and subdivision of long or high wall surfaces is desirable to control temperature movements and cracking.

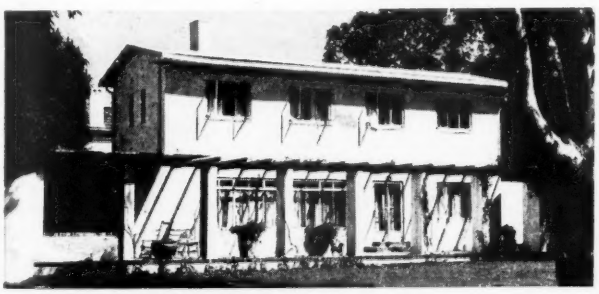
Particularly on the weather side (N—W), the wall must be designed with some form of cavity construction in an attempt to solve the problem of rain penetration. These proposals for roof and wall are much influenced by available materials.

Most roofing materials are available, but the corrugated materials provide the cheapest roof at the present time and, in addition to their basic efficiency from a weather point of view, save structural timber because of the wide spacing and low pitch possible. The main trusses and purlins must be well secured against lifting due to gale winds, which carry off a number of roofs each winter. Plain tiles and slates are little used, being expensive and relatively inefficient, but interlocking clay tiles and

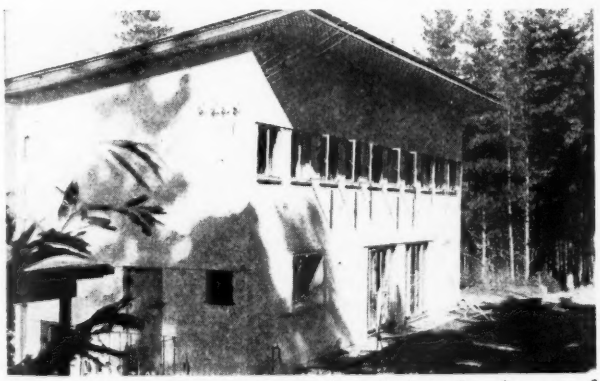
One of a group of three staff houses for the University of Cape Town



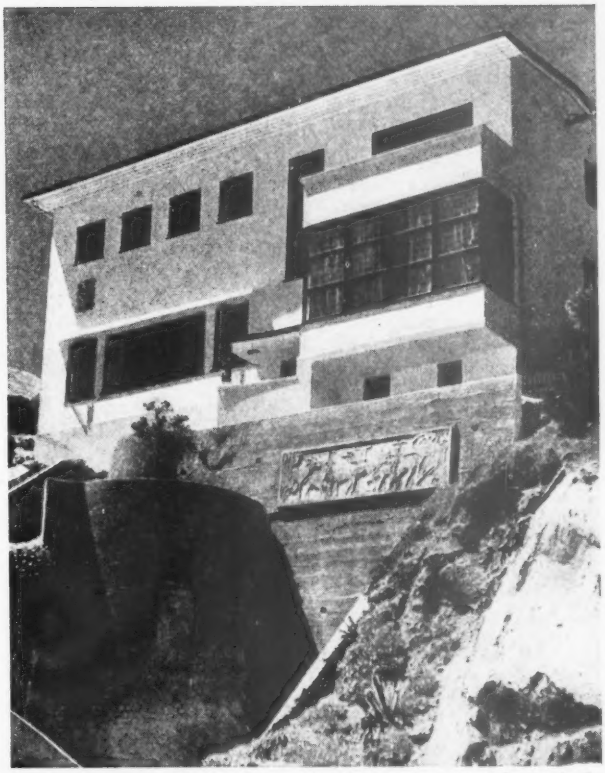
An 'austerity' house at Constantia built at a time of acute material shortage



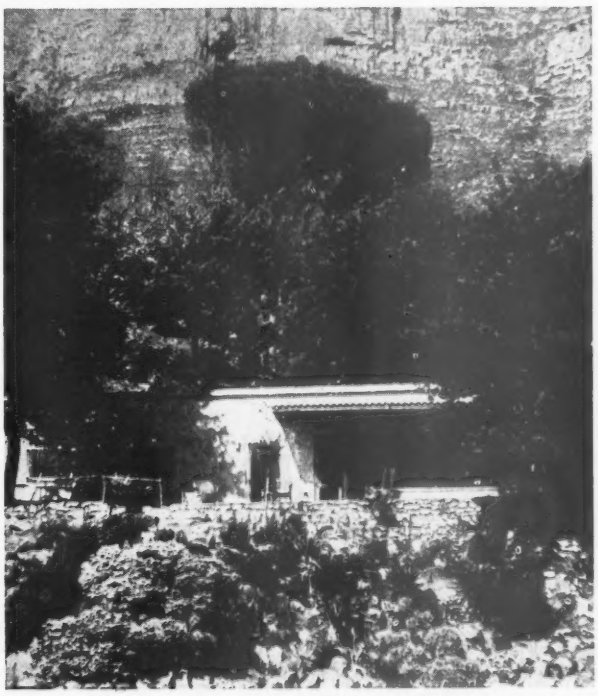
House at Kenilworth completed just before the war



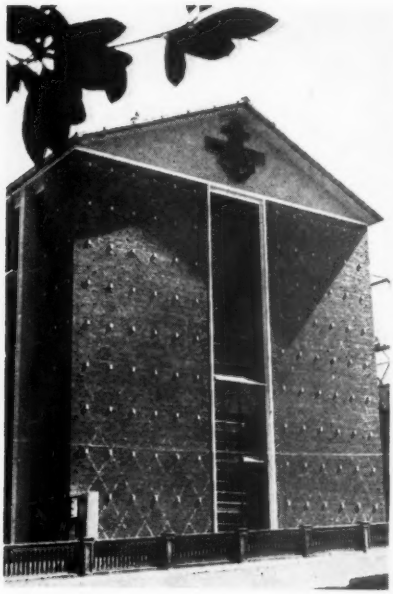
An architect's own house at Constantia built just after the war, of whitewashed brick and simple shed roof

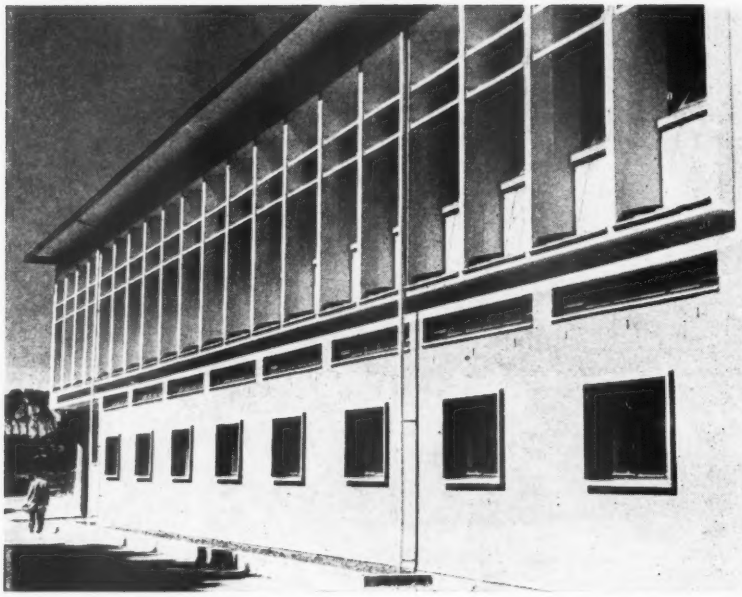


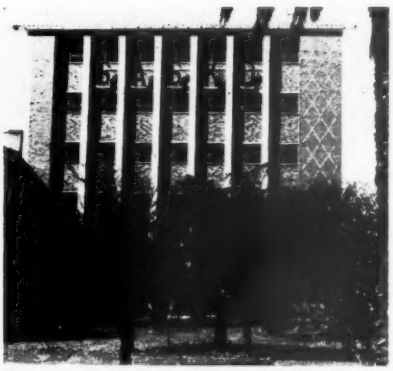
A sculptor's house, Bantry Bay, on the slopes of a mountain overlooking the sea



A house below Table Mountain by Andrews and Niegeman







Extension to a flour mill, Rondebosch, in patterned facing brickwork, still seldom found in the Cape

Extension to the medical school, University of Cape Town. The easterly facing laboratories are entirely protected from direct sunlight on the benches

cedar shingles are popular for domestic work for the sake of appearance. An increasing number of asphaltic roofs are being used, as knowledge of their reactions to Cape conditions accumulates and workmanship improves, but at the present time, they require an expensive substructure.

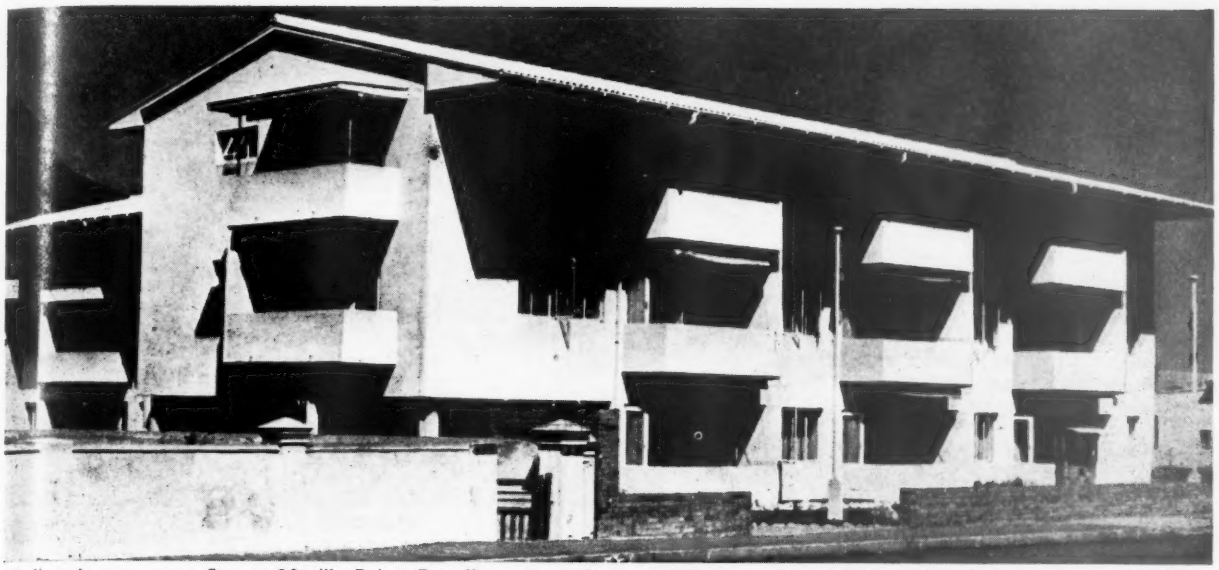
Good quality structural timber remains in short supply, is very expensive, and is open to attack by a variety of wood borers many of which seem to have taken refuge in South Africa during the war, and are difficult to purge. There is a real tendency, therefore, to eliminate or reduce the amount of timber in buildings wherever possible.

Brick remains the chief structural walling material. The run-of-kiln bricks are of fair quality but are inconsistent in dimension, a $\frac{1}{4}$ in. to $\frac{3}{8}$ in. variation being not unusual, which makes good fairface walling difficult, even if the colour were reasonably attractive which unfortunately it is not. Many buildings are, therefore, cement rendered externally and painted, but few architects would claim this to be an ideal solution, in spite of the fact that the Cape plasterers are very good craftsmen, for cracking and crazing occur rather indiscriminately even after the most careful precautions. Facing bricks of good quality are obtainable, but there is very little choice beyond an expensive semi-glazed smooth-surfaced impervious brick which tends to have a very dull appearance in the mass. Bricks are large, rising four courses to $13\frac{1}{2}$ in. to 14 in. and the scale of wall and bricklayers' tempers would both be improved if the bricks were smaller. Unfortunately, no hollow clay blocks are yet available in the Cape and ordinary bricks must usually be used for internal partitioning.

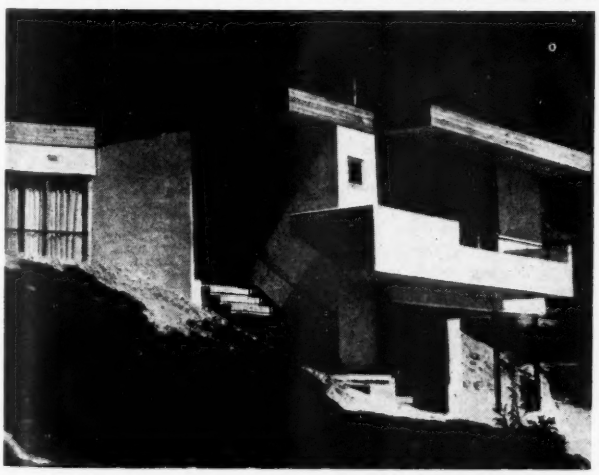
The traditional types of windows are giving place to newer forms of fenestration resulting from studies and experiments in sun penetration control, ventilation, and heat insulation, all related to orientation. At the moment this activity is restricted by the fact that glass is in short supply and of limited types, and that standard types of steel and hardwood windows are available and must be used in order to effect economies.

Regulations and Controls

Building bye-laws exist in all urban areas in the usual forms. They vary a little in the standards they demand, and many of the smaller towns are affected by developments in building standards stipulated and revised by Cape Town itself. As examples, Cape Town demands the submission of structural calculations with all plans; limits domestic room heights to a minima of 9 ft. on the ground floor, and 8 ft. 6 in. above; specifies minimum bedrooms at 70 sq. ft. floor area; and rightly has an



Medium income group flats at Mouille Point, Cape Town, by Andrews and Niegeman. Several other similar blocks have been built by this firm in other suburbs of Cape Town. Note the typical wide eaves overhang to exclude high altitude sun



Two houses designed for architects; above, Mr. Niegeman's house at Tokai by Andrews and Niegeman and, below, Mr. K. Hall Gardner's house in Tamboer's Kloof, Cape Town

Above Mr. R. Wille's own house at Bishop's Court, Cape Town, Below, another view of the house below Table Mountain by Andrews and Niegeman

exacting code of fire regulations. In addition, town planning regulations are in operation. While architects do not necessarily agree, in some cases, with the standards laid down, the regulations are imposed and administered with fairness and efficiency, and certainly any official in South Africa is usually more approachable than his counterpart in Britain, and there seems to have been more co-operation in the administering of controls.

A very important Factory Act became law during the war prescribing standards of day lighting, fire precautions and space for employees' accommodation. This is having a profound effect upon the many new factory designs, and together with the very interesting structural solutions devised with the object of reducing the amount of steel and timber required, is producing some important contributions to modern architectural design.

The organization of building control was developed during the war when labour and materials became scarce, and for some years the permits granted for essential work specified the amount of the various materials which could be obtained for the particular project. Gradually, however, control has simplified, until, when the war ended, control was largely based on approval of the project, its size and cost. Priority was given to housing of certain maximum size and to industrial development. Since I left Cape Town last December, I hear that control has now been lifted from houses up to 2,000 sq. ft. floor area, and in view of the demand, a very considerable activity must be developing in this field, with an inevitable further rise in building costs. It may be presumed that this is an overture to the eventual removal of building control altogether.

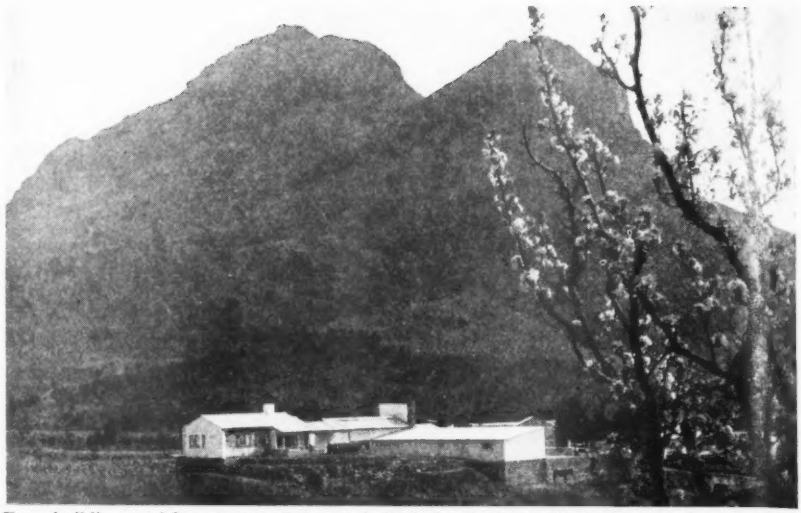
Costs

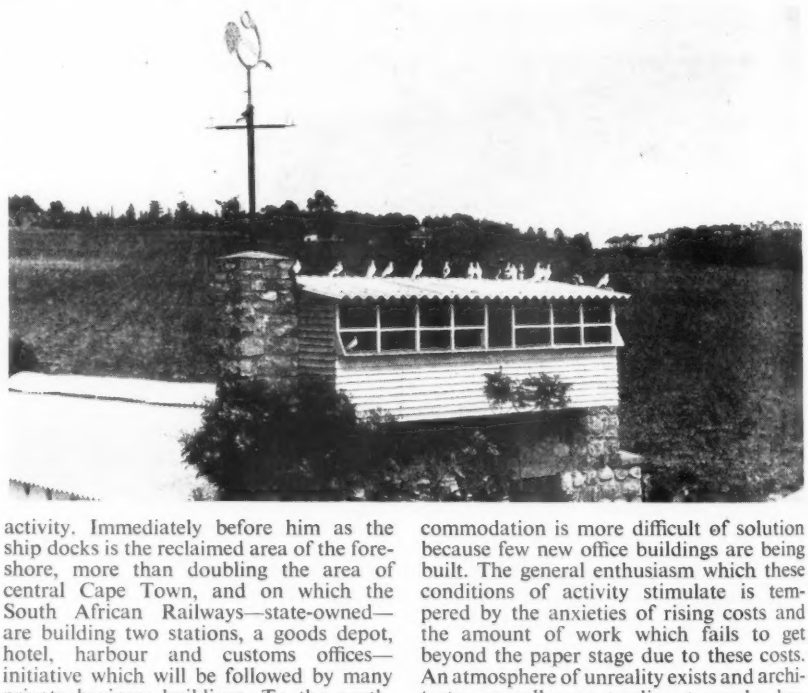
Costs of building are high and still rising. Before the war Cape costs were rather similar to pre-war London costs. Now normal single-storey houses cost between 35*s*. to 40*s*. per sq. ft. floor area, and cube rates of 3*s*. or more per cu. ft. must be applied to the simplest of multi-storied structures and finishes. All manner of fittings—usually imported—are very expensive.

The Industry

The Building Industry as a whole is rather badly organized and there is a shortage of skilled craftsmen and technicians which makes the attaining of first-class building standards a difficult, nearly impossible, task, and the general standards of workmanship are below British standards. A number of contracting firms have tended to develop recently with financial rather than builder directorship. The best of the building contractors, however, maintain a good standard of work, make a real contribution to public service in the face of great difficulties, and are a pleasure to work with, due to the standards and attention of the directors and foremen concerned.

The newcomer to the Cape will be impressed by the very considerable building activity. Immediately before him as the ship docks is the reclaimed area of the foreshore, more than doubling the area of central Cape Town, and on which the South African Railways—state-owned—are building two stations, a goods depot, hotel, harbour and customs offices—initiative which will be followed by many private business buildings. To the north, large industrial areas have been planned on which scores of new factories are being erected for a great variety of enterprises. New houses and flats erected by the municipalities or separately built for private ownership may be found nearly everywhere. Architects are carrying out most of this work, and most firms and official offices are very active indeed, often with inadequate staffs and office accommodation. The problem of staff is gradually being solved as more South African students are trained, and as architects and assistants come from Europe. Office accommodation is more difficult of solution because few new office buildings are being built. The general enthusiasm which these conditions of activity stimulate is tempered by the anxieties of rising costs and the amount of work which fails to get beyond the paper stage due to these costs. An atmosphere of unreality exists and architects generally are tending to make hay while the sun shines, with one eye fixed on the horizon.





Farm buildings and farm manager's house, built during the war by direct labour, in the mountains above Stellenbosch. Above, general view; below, detail of the weather vane and dovecot

The illustrations are from an exhibition of photographs of buildings in the Cape designed by past and present staff and students of the School of Architecture, University of Cape Town. The photographs, which were taken by Mr. U. H. Klop, were brought over by Dr. Harper, and have been exhibited at the Architectural Association and Liverpool Schools of Architecture. Messrs. Thornton White and Partners were responsible for those buildings not attributed to other architects.

Housing and Town Development

By J. H. Forshaw, M.C., M.A., B.Arch.(Lvpl.), M.T.P.I. [*F*], Chief Architect and Housing Consultant, the Ministry of Health

Part I of a Lecture delivered at University College, London, on 23 February and 1 March 1948

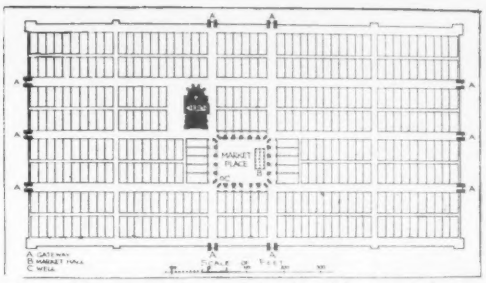


Fig. 1: Montpazier, laid out in the 13th century by the English under Prince Edward, about A.D. 1284. Note regular Roman grid plan. More important quarters with cloister fronting on to square

Introduction

IT IS, I think, a cause of bewilderment, common both to the town-planner and the layman, that town-planning appears to be only a means of obtaining the second best; that it seldom completely succeeds in achieving satisfactory results. It appears that we have abandoned the age-old methods of obtaining, as if by intuition, the required standards of æsthetic and material efficiency in building our homes: but that the complex methods we now use do not produce that delightful atmosphere of pleasant utility which has surrounded the dwellings of men of nearly all ages, in most countries. Thus there seems to be a widespread belief in the perfection of apparently unplanned and unconscious methods. Yet one cannot help feeling that posterity will not look back on this century and the last with the same feelings as those with which we look back on the 17th and 18th centuries. What will they think? Firstly, they will see that in our building we were faced with problems that did not exist for our ancestors. They will surely agree that we were right in accepting the idea of town planning but will decide that it was a long time before we were able to do, by taking thought, what the ancients seemed to do by grace.

I should add that I am not suggesting that our ancestors of the 17th century, who mostly lived in country cottages which today remain only in small numbers and in somewhat remote places, nor that our ancestors of the middle ages living, say, in rat-infested and quite insanitary wooden houses in the City of London, were living even comfortably. But it is true, however, that throughout the 18th century standards of living among the rich continued to rise, while those of the poor fell, until in the early 19th century the gulf between the material and psychological standards of the moderately well-to-do and the great masses of the poor was greater than it had ever been in English history.

But how is it that the old houses and villages are so fine; so efficient after all these years and, indeed, even well-planned? How did our ancestors manage without town planning, and why do we find it so difficult to achieve anything with it?

A study of history will bring us, I think, to these conclusions: that they did not manage without town planning; that towns and villages were not erected, in those days, by many different people working at cross purposes—at best, having neglected to produce a mutually acceptable plan of action; at worst, acting in open opposition to each other; that town planning is no new thing.

Why, then, is there a difference? I hope to answer this question, but briefly the answer is that until the last century the power to build was confined to the King, the aristocracy and the gentry, acting as individuals; and to the merchant guilds, ecclesiastical and collegiate institutions, acting as corporate bodies. No one else could afford it. Moreover, the builders and masons who were employed by the wealthy were highly skilled men, jealous of their responsibility, their craftsmanship and their high social status. Both they and their patrons had been brought up to a tradition of good design and sound workmanship.

From early in the 19th century the aristocracy ceased to monopolize the power to build. Democracy gradually made its appearance. But unfortunately it was an uneducated individualistic democracy without unity and common purpose, which has been more correctly called a plutocracy. The power to build passed more and more into the hands of those who were not competent to hold it.

It remains there today and, besides this, modern society has become so large and its activities so potent for good or evil, that some unifying, co-ordinating agent has become an urgent necessity if democracy is to be worthy of its social inheritance.

Clearly, we have no real cause for surprise why town planning has been revived and has been given unprecedented powers under government policy and legislation. The reason is because circumstances demanded a co-ordinating science to perform certain services previously achieved with a mutual consent moulded by the strong artistic traditions of a long-established way of life. To examine why the arts and sciences of town planning and architecture in their modern forms (and each is both an art and a science) have not yet satisfied the requirements of society, are the further considerations of this lecture.

Now I have said that the last century was faced with problems that previous generations had not known. Really, it was not just a set of new problems; it was a complete change. The 19th century saw the completion of a fundamental change in the nature of English life. A nation supported by agriculture and governed by an ancient aristocracy had become a nation supported by industry and governed by its middle-class.

As I have said we were slowly becoming democratic, and one instance of this movement was that the power to build, that is wealth, was not confined to the type of individual and corporate body that I have indicated. It is true, of course, that the joint-stock company had been in existence since Tudor times, but until recent years such companies had been owned by merchants not only wealthy but high in the social hierarchy and therefore rich in culture as well as money.

It is because wealth comes to a man quicker than wisdom that the advent of democracy is long and its progress slow. At every step it must be accompanied by education and devoted leadership. It is therefore significant that the first difference we see is the peculiar nature of the new-age in which all the arts and life itself were debased by desire for pecuniary wealth. In this terrible wave of insanity the art of building suffered as severely as any, from commercialism. All sense of art was lost, not to be regained easily or securely even in our own day; and in attempting to regain it we are in a vastly more complex position. For our ancestors the countryside was a clean canvas: they had elbow room and a clear view of natural landscape unspoiled by man.

We in a later age are left legacies that are not always an advantage. Indeed, when these legacies have not been intolerable obstacles in our way, they have often been sufficiently useful to be accepted by the majority of us as good enough and have thus been equally harmful. We had been content to make do with anachronisms for so long that we forgot what it was to build a house as Noah built the ark—for a specific purpose.

The mediæval castle, the Tudor manor house, the cottage homesteads, the town houses of the 18th century, even the houses

of mediæval and 17th century towns—of London, for instance, before the Great Fire—were so admirably efficient in appearance and in use for their age that we have ever since praised them. They were functional, as we would say. The trouble is that we were using them a generation or so ago and they were no longer convenient. In many cases we are still using them. At any rate, in those cases where we are not still using them, our population has, until recently, been housed in dwellings which were at least no better than comparable dwellings built two centuries earlier.

As a nation, during these years, we advanced considerably but only in parts. We were like an adolescent child; we grew too fast, awkwardly, without balance and without knowing where or why we were going. Every experience came to us as a surprise, and we were led on, not by foresight and clear judgement, but by petty desires and primitive passions. As could only be expected, we suffered and are suffering many setbacks.

One of these setbacks has been due to our neglect of housing during those years of our unbalanced growth. The nation was so occupied in producing goods and accumulating money that if people had a roof over their heads it was enough.

Dr. Trevelyan in his Social History has expressed the judgement which will be confirmed by future historians. 'The modern city,' he writes, 'in the unplanned swamp of its increase, lacks form and feature; it is a deadening cage for the human spirit. . . . To millions the divorce from nature was absolute and so, too, was the divorce from all dignity and beauty and significance in the wilderness of mean streets in which they were bred, whether in the well-to-do suburb or the slum.' These cities with their suburbs, and the lesser industrial and mining communities which had sprung up over the countryside, were the legacies of which I have been speaking.

There were other things we neglected, too —health, working conditions, education and agriculture; and when our newly found strength failed us and we reached the limits of this unbridled growth in industry and commerce, a period of great depression set in. This country and the countries of western Europe who have been our contemporaries are suffering an acute fit of melancholia at the present time. This is another symptom of our adolescence. We are now beginning to see that all our faculties must be exercised and our anatomy equally developed in order to reach maturity.

Before discussing at greater length in my second lecture the problems which now face architects and town-planners and the means by which we can solve them, I am going to devote this lecture very largely to the historical study of the growth of the towns and villages in which most of our population have their homes.

Historical Study

It will serve our purpose if we spend the time looking back over the past 300 years in order to illustrate three themes which are, I believe, vital to the consideration of contemporary housing.

(*a*) *Monumental and Transitory.*—The first point which I wish to emphasize is concerned with the attitude with which we approach all historical architecture, for we are inclined to forget that only a small percentage of the homes of the last century but one have survived, and for that, I suggest, we should be thankful.

I do not mean that we are not fortunate in having preserved a considerable number of the fine homes of the 16th, 17th and 18th centuries; they will, it is hoped, always remain as monuments to the achievements of those several generations of Englishmen. But they were only the pick, the architectural purple patches of the time. We should be somewhat at a loss for room, to say the least of it, if every cottage which housed the English people during those three centuries remained intact today. Now this may seem very obvious, but we have continued to build structures of such a durable and permanent nature that they will probably last for a century at least, and even then will be very difficult to demolish: yet we all know that they will be out of date in two or three decades. And some of us even realize that many are so abominably ugly that in the year 2000 the National Trust might become a 'Slum Clearance Corporation'. But it would not only have the task of preserving the amenities of the nation but also of restoring them. Let us not give it so great a task!

This means, I believe, a new approach to building on our part, and in my second lecture I want to discuss this more fully. Meanwhile, let us examine our building heritage in order that we shall maintain its high standard; remembering that this is monumental architecture and that quality is more important than quantity.

Buildings can be divided into two categories, 'monumental' and what might be called 'transitory' architecture. By 'transitory' I mean buildings that have a limited life and will be replaced when they cease to fulfil the needs of contemporary life, and by 'monumental' I mean those that for their beauty and fitness will be retained by ensuing generations as sources of inspiration. These like the Grecian temple become the possession not only of a generation but of all civilized peoples, not as a temple but as a monument to a nation's achievement. For the transitory of the present will be evolved from the monumental of the past but itself should never attempt to be monumental. The monumental architecture of the present, like all works of art, must look after itself. But the desire to be monumental for its own sake is fatal. Great architecture is created spontaneously with the impact between the artist and his problem.

(*b*) *Functionalism.*—This leads me to my second theme, which is Functionalism. It is a difficult word, I am afraid, as it is open to misunderstanding and has been used to justify much unsatisfactory modern architecture. Clearly, it does not imply that all ornament and embellishments are to be

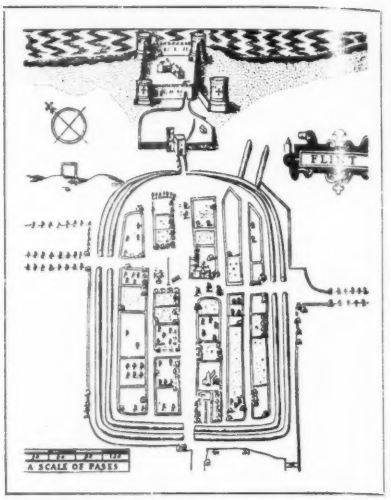


Fig. 2: Mediæval town-plan of Flint, from Speed's 'Theatre of Britain'. Laid out and fortified by Edward I. Note cross-roads leading to principal gates, castle and cattle-yard

avoided. But all aspects of building, whether it be of a power station or a concert hall, must be judged by the criterion: 'Does it fulfil its purpose, physically and æsthetically?'

Bearing this in mind, in our brief survey of modern history, we shall find that all that is now recognized as great architecture has passed this test and that the attempt to copy rigidly from the past, architecture which was designed for other purposes has failed, as building and as art. The purpose must always determine the thing, as a problem inevitably predetermines its solution. The solutions of the past will only apply to similar problems of the present; but if the problems are new, new solutions will have to be found.

(*c*) *The Building Authority.*—Thirdly, I want you to notice the sequence of the building authority from the King and nobility of feudal times, the Tudor and Stuart monarchies, the great landlords of the 18th century, and then the speculators of the laissez-faire period who have, in our own day given place to the State which, by general admission, must now take the first and controlling hand in building and in particular housing.

Historical View-point

Besides these three themes, we shall also find other circumstances which have left their mark on architecture. The neglect and shortcomings of yesterday are often those of today. I make no apology for not confining myself to purely architectural history. You will find that much of what I have to say concerns the social character of English life at a particular time, for without reference to these limiting factors architecture will never succeed nor can it be understood. It was therefore with this idea in mind that I chose to begin this study at the middle of the 17th century, from which point we can look forward and back, con-

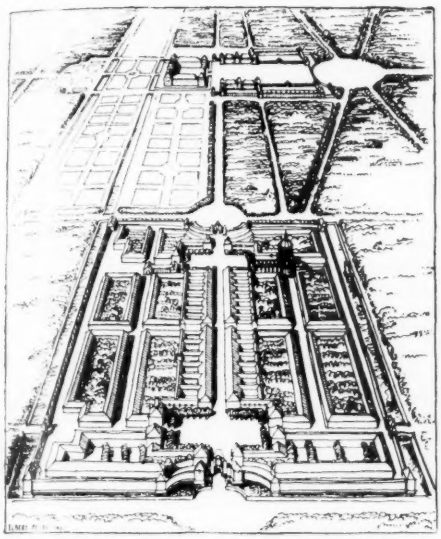


Fig. 3: Richelieu, the 'new town', 120 miles south-east of Paris. Chateau and town built by the great cardinal about 1629. Nemercier, architect. Note axial planning and diagonal avenue from 'Rond-point', before the chateau, to the town church, on the line of the dome. From Hegemann and Peets' 'Civic Art—American Vitruvias—1922'

Fig. 4: Town houses of France. Place de la Carrière, Nancy. Note the scale of the square, the height of the frontages and the pleached lime trees along the mall

scious that, as today, in the middle of the 20th century, we are at a major turning point in English history.

For a long time before Charles quarrelled with Parliament, ecclesiastical building had declined and public building in general, was slowly decreasing under the less virile government of the House of Stuart. It is true that under the early Stuarts the policy of developing the ports and harbours of the British Isles, which had been begun under the Tudors was continued. The wool towns, too, had been greatly expanded until the interruption of the Civil War. But although Cromwell held the reins of government firmly, the final settlement of the century—the revolution of 1688—ended the era of mercantilism which had lasted since the days of Edward I when the monarchy first grew strong in England.

That age—like the one we are now entering—had been one of planned economy under which great building schemes were carried out by the King. To those Plantagenet, Tudor and Stuart monarchs and to the mediæval Church we owe most of our great building tradition. It was Edward I, who was perhaps, the first English town-planner, for it was he who brought the idea from the continent. In his estates in the South of France before he came to the throne he continued the practice of building 'bastides' started by the Counts of Toulouse. The bastide was a small fortified colony set up at the expense of a wealthy lord to draw people to his territory and to encourage them to settle there by providing them with security. In this way he could attract the labour necessary to cultivate his land. The plans of these bastides were usually the same, providing within their fortified walls the facilities then necessary for community life—a market hall and a church and a plot of land on which each settler could build his house (see Fig. 1).

On coming to the throne of England, Edward was able to make use of this experience, and continued throughout his long life to build great castles and fortified towns throughout the realm, and particularly in the wild tracts of the Welsh border counties and the north country which he brought more securely under his control* (see Fig. 2). But it was the Tudor dynasty, culminating in the reign of Elizabeth, which provided England with the most splendid of its royal architecture. Although Henry VIII is remembered for his destructive practices, much of the wealth he snatched from the monasteries was spent in founding many of our greatest schools and colleges. This work of establishing English education in the form in which it has remained until within our own time was continued by his successors Edward VI, Mary and Elizabeth, and is a major contribution to English history both social and architectural.

English Renaissance Architecture

Such, briefly, was the domestic and collegiate character of building which has survived to us unmistakably from the great period of the Tudors. But, meanwhile, the influence of the Renaissance had grown strong in the western countries of the Continent (see Fig. 3), and at the beginning of the 17th century it was firmly established here in the planning and designs of Inigo Jones. Two examples will suffice to show the character of his work, the Piazza at Covent Garden and the scheme for the new Palace of Whitehall, of which only the Banqueting Hall was built. Then, as now, men lived in times of great stress, of religious confusion and change. Inigo Jones hoped and waited for the fulfilment of his more important works, but he was to grow old before the effects of the disturbances and the final upheaval of Charles' reign could die away. This period also marked the end of the true Gothic church building in England—approximately with the coming of Cromwell's Commonwealth in 1650—after that time the work of the revivalists and not of tradition is found everywhere.

At the same time a new and simple architecture was seen in the secluded work of Puritan Meeting Houses* and this same restrained character, which appeared in East Anglia and other areas of nonconformity, was carried over the Atlantic to reappear and mature in many homesteads and community buildings in New England.

With the Restoration, the work of the English Renaissance reached its finest quality, and the countryside was worked upon by woodman, farmer, builder and landscape planter for over a hundred years to give it that peculiar charm and character which we pride today.

The 18th Century

The fine quality of design in architecture and civic building carried out by the great architects and their patrons in the 17th and 18th centuries set a standard which ever since has been a model and an inspiration in English and Colonial practice.

We must remember that our artists and craftsmen worked towards this great culmination, under the influence of France, Italy and the Netherlands (see Fig. 4). And the quality of the work was due largely to the perfection of hand processes under the direction of the master tradesman, and to the careful teaching system of the guilds and their long apprenticeships.

I should mention that these architects were comparatively few in number, and on that account the very wide influence of their planning and design, as revealed in

*See *Mediaeval Town Planning*. Prof. T. F. Tout, Manchester University Press, 1934.

*See *Puritan Architecture and its future*. Martin S. Briggs. Lutterworth Press, 1946.

contemporary work, especially in the reproduction of country and town houses has not been always fully appreciated. In the room shapes and arrangement of the plan, and in the proportion and relation of the elevations, they excelled. Our county and market towns, and the many villages owned by the local aristocracy are rich with examples of this Georgian period. In the provinces most of these buildings were designed and built by one and the same person—the master-builder, who could himself sketch and draw, often tolerably well.

A 'Book of Designs' was always at hand in the home of every master-builder, one in common use being that by Batty Langley,* although there were several other Exemplars of reputable standard. It was the master-builder's constant reading, and he knew this book as he knew his Bible, chapter and verse.

Gardens and Landscape

The Formal Garden was increasingly popular with the aristocracy and wealthy merchants. Most mansions and many smaller houses displayed the skill of the landscape specialists. The great landowner took a keen interest in his neighbourhood and often the most beautiful villages are to be found adjoining his estates. The simple formal line of houses, the village church and its green all show a character and charm which testify to his bounty and the ability of his advisers (see Fig. 5). For example, the care of trees and forest land received scientific study from such men as John Evelyn.

Later, William Kent—a protégé of Lord Burlington—brought from Italy the idea of formal pictorial gardening, imitating the painter's landscape and including classical ornament, terraces and formal water. But in the middle of the century a new movement of free, natural planting was taken up by the energetic Lancelot Brown. This new mode is interesting as an early sign of the Romantic revival of the 19th century.

It was due to the study of Chinese gardening which had already become a fashion in France. Its acceptance in this country followed upon the work and writings of William Chambers and it soon met with great enthusiasm. Uvedale Price became its leading exponent in his treatise on 'the picturesque'. Humphrey Repton and his sons, demonstrated in practical achievements the theories of both schools by re-introducing the more formal planting in the proximity of the house. The work of these men in the field of landscape gardening, is worth the expense of more time than I can afford here, since they are the pioneers in an important branch of the architectural profession.

Early 19th century

Regency architecture which developed out of the lighter Palladian-Georgian gave London, in the early 19th century, promise of a great period of civic design and what remains to us is important. Unfortunately, it was soon to be overwhelmed by the strict classical and later sham-Gothic revivals. It was preceded in London by the larger Georgian town houses, but as early as 1770 the layout of the great town estates had commenced.* This new and personal interest of the noble landlords was to increase rapidly as the century turned. Similarly, wealthy and knowledgeable speculators had acquired other large areas, and these were developed with a skill and quality that has not since been surpassed in London or in the residential districts of the newer and rich cities of America.

While industry grew apace, the factory-town and village deteriorated; nevertheless, specific efforts 'to beautify' were still being made in certain cities and provincial towns. Edinburgh's New Town was being prepared; long street frontages of fine town houses in a dozen or more provincial towns had been completed. But by this time it is clear that new forces had come into play which made certain the collapse of 18th century culture. Its overflow into the next century was irrelevant to the main stream of English history.

Coal, Iron and Steam-power

It will be useful to consider how this golden age of domestic and landscape architecture came to an end. The social history of the reign of George III and after, will tell us the story of its eclipse; the individualism of the age which had been working for so long in men's minds was to bear fruit in industry as it had long been doing in commerce.

Even in the late 17th century the scientists of the school of Galileo and Newton, of which Wren himself was a disciple, were preparing the ground for the inventors and engineers of the next century to employ steam-power plants and mechanical structures creating new industries which were to change the face of England. It was the beginning of what we now call the Industrial Revolution. We have been too often ready, perhaps, to regard this period narrowly as something belonging solely to our own political and social life, whereas today, less rich and less powerful, we realize that the whole period might with truth be regarded as one of experiment in which the great coalfields and steel works of Britain were the pioneer laboratories of the world.

But we shall find that artistically we were not ready to make the best use of the great opportunities which came with the expansion of engineering science and, in consequence, the design and the art of town building suffered and declined, with notable exceptions, from the close of the 18th century to the end of Queen Victoria's reign.

The Beginnings of National Industries

During this period, men were occupied in making use of many startling inventions for the improvement of communications, canals, highways and bridges, harbours, steamships and locomotives. The field of the engineer was greatly widened and his responsibilities under the operating companies included much work which hitherto had been the business of the architect or master-builder. The rapid expansion of industries demanded the provision of shelter for operatives working in mine, mill or factory. When such vital requirements as water supply, drainage and sanitation were overlooked and omitted, it is not surprising that no thought was given to the planning of surrounding amenities. The business of 'estate developer' and of 'works contractor' emerged, initiated by the sudden demand, and these new organizations received a great impetus as the new industries flourished and markets grew wider and further afield. It was the beginning of the modern building industry: new methods, such as the iron column, and new tools, such as the steam saw, were adopted extensively. The local trades were becoming national industries, methods of construction became feasible that were not to be found in the various 'exemplars'. In consequence, the principles of good design lost universal hold in office and workshop, and only in some few cases can be seen traces of the old training. The speed with which the population increased and the industrial towns expanded gave no ample opportunity for the study of civic planning schemes which were carried out in certain towns, such as Bath, Cheltenham, Brighton and Weymouth; but much less were those responsible prepared to benefit by these examples. The need for social improvement to keep step with commercial advances was not appreciated (see Fig. 6).

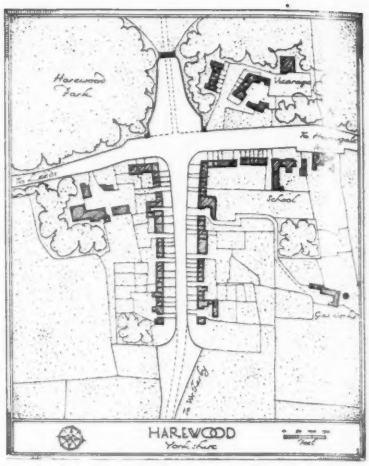


Fig. 5: Village of Harewood. Planned deliberately on formal lines as an incident before the main entrance gates of Harewood Park; architect, John Carr, of York, 1760. From 'Town and Countryside', Thomas Sharp, 1932

Effect on the Countryside

The slow decline of the countryside commenced with the steady movement of the population to the towns and to the coalfields, to the potteries and to the cotton and woollen districts of Lancashire and Yorkshire. Uncontrolled mining led rapidly to the spoliation of agricultural land, to the ruin of farms and woodland. The loss of the best influence of the old order grew

*The City and Country Builders and Workman's Treasury of Designs, by Batty Langley. London, 1740.

*See *Georgian London*, John Summerson. Pleiads Books, 1945.

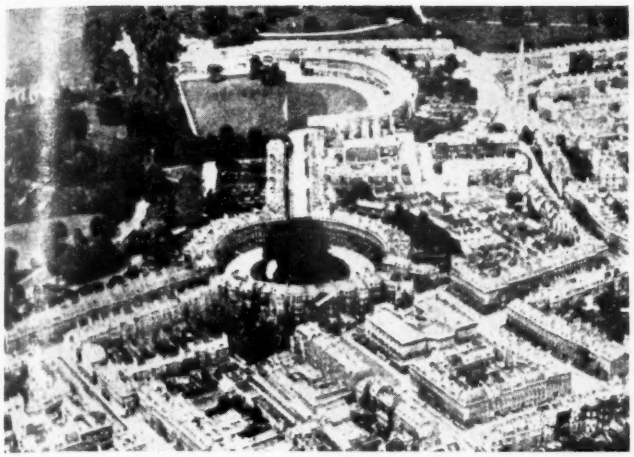


Fig. 6: Bath. Development in the 18th century. The north part of the town including the circus was laid out by John Wood, the Elder, between 1725 and 1754. The Royal Crescent seen near the top of this view was the work of his son John Wood, 1775. Fig. 8, above: The Crystal Palace as reassembled at Sydenham, 1851

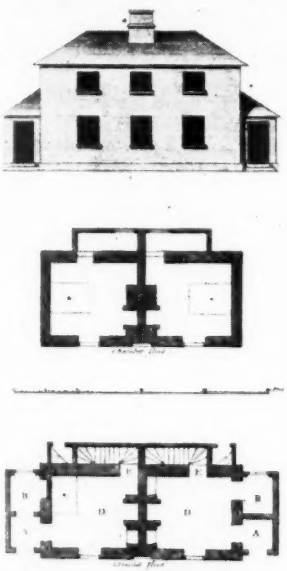


Fig. 7: Early semi-detached cottages, from 'Plans for Cottages or Habitations of the Labourers', by John Wood, the younger, London, 1792

serious, and the knowledge gained in the personal care and management of country estates diminished year by year.

The abuse by the absentee-landlord of privileges which had previously been respected began the transformation that was slowly to fulfil the condition 'where wealth accumulates and men decay.' In less than a century England was blackened and scarred; large tracts of agricultural land were well-nigh laid waste as if modern warfare had passed across them; the 'waist' of Scotland was similarly blighted and the green valleys of South Wales were treeless in sixty years.

The old villages on the London fringe were rapidly growing, and although they had not yet become suburbs, it was already realized that they would soon be engulfed in the expansion. Terraces of the smaller town house were being built by speculative developers on land between scattered farms and the country villas already existing (see Fig. 7).

The Coming of the Railways

The final phase of this hastening to outdo all that had gone before in the search for prosperity and material wealth was marked by the coming of the railways. Few towns that lay on the proposed routes could resist the attractive prospect of the prominence that the new Iron Road would bring; indeed, it was right and proper that a line of quick communication should be eagerly sought and welcomed. The important consideration of the correct location of the route was, however, very often raised, as in our own time, to be promptly dismissed as of no consequence comparable with the benefits that the railways would confer upon the town and its inhabitants.

The terminal at Euston was agreed in 1835, and in 1838 the station was opened. By 1856 there were as many as six stations in London and as many objectionable viaducts. Fortunately, the existence of the New Road from Marylebone to St. Pancras arrested penetration in the North of London, but in the South neither the public nor Parliament, fascinated with the possibilities and the real success of the new mode of travel, could be roused to prevent the Dover and Chatham lines being brought to Charing Cross, and the consequent disfigurement of the Thames Embankment in the heart of London for a century at least, if not for all time.

Uncontrolled Building

But these abuses in the countryside and the capital were not the worst; for these we must go to the factory towns of Lancashire and Yorkshire. In the first place, it was only too easy for commercial enterprise to erect factories and houses. The possession of land was the sole requirement to start building. There were no local building regulations nor were authorizations necessary. Results alone justified the means.

Towards Reform

Notwithstanding the passage of the Reform Bill of 1832, public opinion was not aroused to the folly of bad housing and the lack of proper sanitation. In spite of alarms and riots by workers and the valiant efforts of Edwin Chadwick from 1834 onwards, it was not until 1848 that 'under the impulsion of fears engendered by repeated epidemics of cholera' the Public Health Act was passed by Parliament. The Acts of 1872 and 1875 gave eventually a minimum measure of proper health control by establishing every urban area as a sanitary authority. In short, all this period is one of untold misdevelopment of urban building and uncontrolled exploitation of the surface of the countryside for over a hundred years before 1875; and of a limited control for the past seventy-five years.

It is hard for our generation to believe the paucity of public or private initiative in perceiving the evil that overcrowding and insanitary conditions must engender. For the English character has always been humane and sensitive to cruelty. But here was cruelty, and with it apparently apathy. It cannot all be accounted for by ignorance. It is true that there were two societies in England, one of the country and one of the town, and each barely knew how the other lived. But although we are not inhuman, we are often stupid. If the Victorians had not persuaded themselves unconsciously that they lived in the best of all worlds, they believed that it was the best possible world. The economic system, 'laissez-faire' was inevitable, its principles essential to this world, and therefore there was little to do but to pray for the souls of the poor and to make sure that they were not poor themselves. It is not therefore surprising, that such pioneer efforts as were made were broken, as immediately and surely as a ball bounces off a brick wall, by

this psychological barrier in the minds of normal, well-meaning Englishmen.

An example of one of these efforts in the late part of the century is the Royal Commission on *The Housing of the Poor* set up by Gladstone in 1884 and presided over by the Prince of Wales. Its proposals were largely put into force in the 'Housing of the Working Classes Act' of 1890, and did at last stem, if it did not reverse, the rising tide of slum dwelling, but its spirit was not always observed and its regulations were often evaded. As a rule representation on local councils was confined to the smaller capitalists who alone had the time and inclination to attend meetings. Health and General Purposes Committees under the Act were intended to supervise action against the very men—the jerry builders—who often were the only people represented on the Committee. Disinterested leadership in municipal government was severely lacking, and without it little progress can be made with any legislation.

Causes of the Decline

In searching for the cause which led to a departure from the established practices in building throughout this long transitional period we must conclude that the rush of development and the consequent scarcity of materials and of skilled labour, brought about a decline in æsthetic awareness. It is a condition with a parallel in our own time from which we must take a warning.

But we must also conclude that the new and dominant class—the middle-class industrialists of that time—had not been taught by environment to recognize beauty. They had not the advantage of generations of training in artistic appreciation which the aristocracy of Europe had received since feudal times. Nineteenth-century England as a whole will appear æsthetically barren to its successors, not because the educated class suddenly died off but because they ceased to be the economically dominant class. A generation is never great unless its leaders are both economically and artistically alert, and that is why education is so important in the democracy of the twentieth century.

While the Victorians neglected the housing of the poor, it cannot be said that they were greatly successful in building homes for the equally large families of the prosperous. By their lack of culture they destroyed the great tradition of civic and domestic building which they had inherited from their Georgian grandfathers and replaced it with sham styles and mockery.

The Gothic Revival

At the beginning of the reign many buildings of the classical revival had been recently completed in a series of town developments throughout the country. The great bulk of new work, however, lacked the quality of design which the few outstanding examples displayed. It was mainly in the revived Gothic style, a fantastic fetish which knew no bounds and spread as a fungoid growth upon building, furniture and decoration. Railway stations and coaches were festooned with its 'branches and fruit', and the expanding 'systems' carried the infection to remote places which otherwise might have escaped.

The Great Exhibition 1851

In contrast to dull and unimaginative normal enterprise, the Great Exhibition of 1851, instigated by the Prince Consort, was a success from the outset. It revealed, too, a foresight in the selection of Paxton's great scheme, the significance of which we of this generation have only now begun to understand. But this conception of a quite new design and construction did not win the reception it deserved. The opportunity to investigate and develop its potentialities passed unheeded. The fact that the great glass palace was capable of being dismantled and reassembled at Sydenham did not strike our architects and engineers that here was a structure that pointed to the future. It was, indeed, the prototype of the factory-made building of our generation. When the Crystal Palace was destroyed by fire in 1936 it was realized, perhaps for the first time, that Joseph Paxton had been one of the few great designers of his century. For when this work was executed architectural design in England was falling to its lowest ebb and professional taste was of a very doubtful quality. (See Fig. 8).

The School of William Morris

In this confusion, a few lone spirits attempted to bring light to bear on the need for reform. The writings of William Morris and his disciples were the voices in the wilderness, and we are only now reaping the late harvest of this early sowing and planting. Philip Webb, Norman Shaw and Charles Voysey and one or two other architects had been working for a revival, not of the forms of the past, but of the crafts and for the spirit of craftsmanship, believing that through the ability to design, art would again have a major influence on life. Webb at this time designed the Red House for Morris at Bexley Heath, which greatly influenced domestic architecture, sounding a note which was later echoed in the Hampstead Garden Suburb and then at Roehampton.

The Movement towards Planning

The first whisper of the new humane town planning movement of the 20th century can be seen in Saltaire, started by Sir Titus Salt in 1852. It was perhaps the experiment for Port Sunlight to follow after some fifty years.

After 1856, the question of town reconstruction on a large scale was voiced in certain council chambers as a result of Haussman's activities in Paris, and Joseph Chamberlain led the way in England with the new Corporation Street in Birmingham.

James Buckingham produced in 1875 his scheme for a new town 'Victoria', which he intended should be repeated throughout the land; in this it was the forerunner of the idea for 'The Hundred New Towns', which was strongly advocated in some quarters before 1939. But these individual efforts of persons or authorities are only incidents—there was yet no general policy—and in the absence of a majority of progressive minds in the councils of local authorities the long drift continued.

The Garden City

In the last years of the 19th century Ebenezer Howard produced his book* advocating Garden Cities as the new towns of tomorrow. These theories were set out and illustrated by diagrams based on a solar constellation, hence the 'satellites'. From Howard's ideas sprang the building of Letchworth in 1907 by Barry Parker and, later, Welwyn Garden City (see Fig. 9). Of the other notable pioneer examples of garden suburb and garden town development, the Hampstead Garden Suburb by Raymond Unwin and Edwin Lutyens, and the work at Bournville for the Cadbury Trust are important.

The Acts of 1909 and 1910

I hope you will see from this brief summary of developments, from the middle of the 19th century to the outbreak of World War One, how the growing need was so slowly understood. It was not until John Burns secured the passage of the first Housing and Town Planning Acts in 1909 and 1910 that a deliberate policy was embarked upon by the Government.

This milestone in the history of town development was quickly followed by the war which accentuated and brought to light the shortage of good housing in which the nation had already stood in need for so long. Yet, again the government failed for want of courage and inspiration to adopt the policies which the pioneers had long been advocating. Patrick Geddes, the greatest of them all, wrote† in 1919:

'We hear of Reconstruction Committees by the score, even by the hundred, and all of them strenuously at work on necessary problems. But of the one supremely needed committee there is so far no mention. The missing committee is one that would vitalize, energize, spiritualize all the others. How? By using the psychology of war to quicken the psychology of peace. It would get to work on plans for a 'great push' in making beautiful, healthy and efficient the ugly towns, wasteful cities and dreary villages which are the legacy of our paleotechnic peace. And this planning our missing committee would do in the spirit of an army preparing for battle and with like command of national resources.'

The inter-war years were marked by a great deal of far-reaching spade work, but owing to a complete lack of understanding and sympathy on the part of authorities few of these planning schemes were adopted in the spirit they were conceived and fewer still more than partially accomplished.

Successive administrations after 1918 dealt with housing and town planning with an enthusiasm which ebbed and flowed with political fortunes. An immense volume of housing was accomplished, in number quite spectacular, and its higher standards of individual house accommodation is com-

**Tomorrow A Peaceful Path to Real Reform.* Swan Sonnenschein & Co. 1898.
†*The Coming Polity* (with Victor Branford), London, 1919.

Fig. 9: Air view of a part of Welwyn Garden City

mendable. Above all, they failed because they were acres of houses and nothing else. New towns were needed; instead they merely added more unrelated houses to the old cities—to the congestion and the slums.

Large and small authorities vied with their neighbours of comparable size in output and expansion. The giants overspilled their boundaries and the county councils were helpless. After the halt caused by the financial disturbance of 1931, it was not difficult to water-down the draft clauses of the Town and Country Planning Bill of 1932—until as an Act it was little better than useless. The return of improved trade gave a fresh impetus to speculation in house building and land development which made by comparison all previous misfortunes seem insignificant. A new rash of development appeared regularly round London and throughout the country until the approaching war clouds brought speculative operations to a standstill.

The failure to reorganize our social services and industrial development after World War One, in the light of changes heralded by that upheaval is something many of us must recollect with regret. The time was opportune but the occasion was allowed to pass. Since then, by our national exertions and the help of mighty allies, we have safely overcome a second upheaval, but we have by no means recovered our internal stability nor shall we stand again in the position which we had held in international affairs for three centuries.

The Task Now and in the Future

In future the role and duty of the elected representatives and the administering authorities will carry more responsibility than ever before. National unity depends on unselfish social progress. Even between the wars, in the enjoyment of comparative wealth and prosperity, the provisions for education and recreation were not nearly enough nor of a kind suitable to give spiritual satisfaction and a sense of purpose to community life.

Moreover, unless our policy in reconstruction is ordered with more regard to the long term view, we shall fail in this dawn of the atomic age more seriously than our ancestors at the advent of steam-power. Today it is easier for all to be less selfish; all have been 'tempered by the fire' of common sacrifice in war; but we are immeasurably the poorer in material resources and physical power. What is required of us will test our strength and unity as a nation; will test not only our physical resources but our moral and visionary powers.

Finally let us return to the architect himself for, in our own field, he is the man from whom the leadership must come, and I would remind you of the words of another of the outstanding teachers of this century. Nearly thirty years ago W. R. Lethaby wrote*: 'Our aim should be to develop a fine tradition of living in houses.' . . . 'Exquisite living on a small scale is the ideal.' . . . 'Our airplanes and motors and even bicycles are in their way perfect. We need to bring this ambition for perfect solutions into housing of all sorts and scales.' . . . 'The chief obstacle to our having better houses has been the superstition that they should be built in a style.' . . . 'A motor-car is built with a thought for "style" that is finish and elegance, but it is not to look like a sedan chair or a stage coach.' . . . 'We have to prune our building forms as we prune a fruit tree, and sternly cut away the dead wood.'

*From an article in *The Athenaeum*, May 1920.

I have spent some time reviewing the evolution of English domestic architecture because it is essential for us to learn the lesson that if our new building is to be a force for good in society, it must have the qualities of great art. And therefore we must be prepared to sacrifice all that does not maintain the standards we demand. I have tried to show that it must be designed for its purpose—to accommodate the men and women of the generation it serves in the occupations of their life; that it must not be a museum-piece, or the medium of a few men's self expression; that it must express the true nature of that generation's life in providing for its needs.

I have also tried to remind you of the changes that have come over this country during the last 200 years, and that now make necessary vigorous and comprehensive action in the field of housing and town planning.

(Part II to be continued in the May Journal)

Review of Construction and Materials

This section gives technical and general information. The following bodies deal with specialized branches of research and will willingly answer inquiries.

The Director, The Building Research Station, Garston, near Watford, Herts. Telephone; Garston 2246.

The Director, The Forest Products Research Laboratory, Princes Risborough, Bucks. Telephone; Princes Risborough 101.

The Director, The British Standards Institution, 28 *Victoria Street, Westminster, S.W.*1. *Telephone; Abbey* 3333.

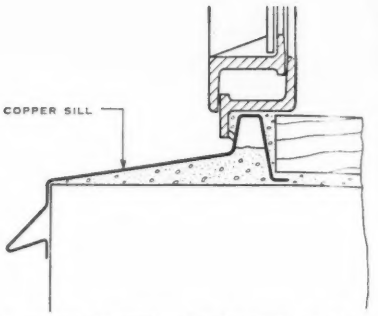
The Technical Manager, The Building Centre, 9 *Conduit Street, W.*1. *Telephone; Mayfair* 8641-46

Housing in South Africa. A report on sub-economic housing practice in South Africa has been published by the South African Council for Scientific and Industrial Research. It has been prepared by Mr. P. H. Connell [*A*], who is one of the Allied Societies' correspondents to the R.I.B.A. Architectural Science Board. The report originated in a number of requests from overseas for information on South Africa's experience in the field of sub-economic housing, with 'special reference to the housing of Africans or Natives as they are commonly called in this country', and deals with housing as carried out by the State through the local authorities on a sub-economic basis. An outline is given of established housing practice from the inception of subsidized housing in 1930 until the end of 1946, and a section is devoted to the 'human and economic background, which in the Native's case has a number of special features peculiar to the country and to the mixed and transitional state of Native society at the present time.' This seems an echo of our own position here in England, where it is recognized that special consideration should be given to the needs, or preferences, of rural workers; preferences that derive from age-old habits of living. This fact is true in the case of South Africa also, for the report says 'the approach to the problem (of housing) in general is continually being revised with the intention of promoting progressively higher standards of construction, design and amenity. It is likely, therefore, that the contemplated expansion of the house-construction programme will be accompanied by an appreciable rise in the general standards of housing in this country.' The report is divided into three parts: 1, the social and economic background; 2, technical aspects; and 3, appendices giving schedules of comparative space standards, particulars of accommodation, minimum standards, and so on.

The report contains a number of plans of houses for the different classes of the population, all but one being of the bungalow type; there are also examples of layouts adopted in various towns, from which it would appear that a formal pattern is in greatest favour. The average cost of building today is given as 25*s.* per sq. ft. for European standards and 14*s.* for Native standards, the figures being based on the overall area of the dwellings, inclusive of the walls. The average cost of the type of houses occupied by the lower middle-class European is in the neighbourhood of £2,000, and from £350 to £700 for urban Natives, according to the type provided. The report thus gives a description of the way in which South Africa has applied itself to those problems which also affect us here, and we read with sympathy the remark that 'it is to be regretted that the reductions in cost of sub-economic houses have been achieved largely at the expense of standards.'

Copper. The Copper Development Association have published a booklet under the title *Copper underground; its resistance to soil corrosion* in which a case is made out for the use of copper as a material for gas and water services underground. Laboratory and field tests have been carried out, from which it appears that where serious corrosion occurs it is not due to any one characteristic of the soil or climate, but to a combination of high sulphate and (or) chloride content with poor drainage and considerable moisture capacity, and a moderate or heavy rainfall, say above 30 in. or so. Field tests on copper and other materials showed copper to advantage. Buried copper gas pipes have been used in America for some 20 years, and Australia has many years' experience; in Britain the Nairn Gas Light Company have adopted copper for all gas services employing $\frac{3}{4}$ in. to 2 in. diameter light gauge tubing. The Company report that in 20 years they have not had any internal or external corrosion trouble. In this instance the soil generally is of a sandy nature, with red clay here and there. Manchester Water Department use 1 in. by 18 s.w.g. copper pipes as subsidiary mains feeding short streets or cul-de-sacs. The results of field tests carried out by the British Non-ferrous Metals Research Association on copper and lead, and by the U.S. National Bureau of Standards on copper, lead, steel, and cast iron, are given in the booklet, together with an extensive bibliography. There is also a list of C.D.A. publications.

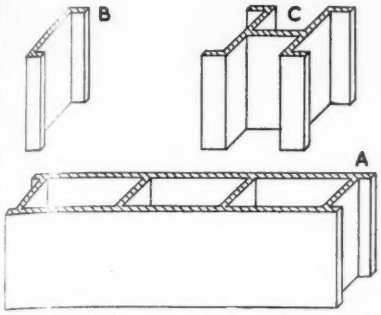
In another publication, *Copper Flashings and Weatherings*, detailed information is given on the use of copper above ground. Drawings and photographs show the proper method of forming seams, welts, ridging, rolls, gutters and so on. Methods of weathering parapet walls built in brick, stone or concrete are illustrated, as well as sill weatherings to metal windows; a somewhat unusual drip is shown on this page. The use of copper in such above-ground positions is, of course, well known to architects; nevertheless, study of the booklet may bring to notice little technical details which might otherwise be overlooked. It is stated that at present-day prices 26 s.w.g. copper sheet or strip is approximately half the price of 4 lb. lead, and that 24 s.w.g. is about one-fifth the weight of 5 lb. lead and one-tenth of tiles.



A copper sill weathering for metal windows

The address of the Copper Development Association is—Grand Buildings, Trafalgar Square, London, W.C.2.

Colour. A report has been issued by the British Colour Council for the years 1945 to 1947. The work of the Interior Decoration Division will be of most interest to architects, as it is concerned with the correct application of colour in relation to light as a means of increasing production efficiency, for it 'has been found that absenteeism is reduced when employees, at all levels, are relieved of the insidious fatigue which is so often due to eyestrain. This can sometimes be reduced, if not entirely eliminated, by using colours in the correct proportions in relation to the existing lighting conditions', and it is reported that during the discussion following a lecture on 'Economic Reconstruction—Production', a member of the audience said that in one of his departments production had been increased by 10 per cent following the adoption of a colour plan recommended by Mr. R. F. Wilson, the Art Director of the British Colour Council. A Dictionary of Colours for Interior Decoration is expected to be published this year, and will show some 360 colours in general use throughout the many sections of the interior decorating trades, each colour being named and numbered with samples done on a glossy and a matt surface, and on a pile fabric. The Division have also information and examples of furnishing fabrics, wallpapers, and journals illustrating the trend of contemporary colour and design in various countries. Colour cards on 'Colour in the Home' and 'Colour and Lighting in Factories and Offices' can be obtained from the Council (13 Portman Square, London, W.1) at 8*s.* each, and 'Colours for Vitreous Enamels' at 3*s.* each.



Holoplast. A the pane . B & C examples of metal supports

Holoplast. During the last war need arose for a light bulkhead construction that would be an improvement on the more traditional materials previously in use, and Messrs. Holoplast Ltd. produced a panel made of a synthetic resin laminated structural plastic material manufactured in the form of cellular panels, which are in effect a series of girders forming one homogeneous unit, as will be seen from the illustration on this page. These panels are made to the standard dimensions of 8 ft. by 4 ft., but can be cut as required by the user; the material can also be drilled and machined, and fittings can be screwed direct to the panels with self-tapping screws. The webs and flanges of the panels are about $\frac{1}{8}$ in. thick, the webs running in the longitudinal direction at 2 in. centres, and the overall thickness of the panel is about 1 in. The beam construction allows the panels to be used as flooring, and when used in such a situation the safe uniformly distributed loads, with the panel placed longitudinally, range from 2,090 lb. per sq. ft. over a 1-ft. span to 2 lb. per sq. ft. over an 8-ft. span, when the panel is freely supported, taking permissible deflection as 1/325th of the span. When the panel is used transversely, it is recommended that the maximum distributed load should not exceed one-eighth of that permissible when the beams run longitudinally.

The construction gives exceptional rigidity when the panels are used for partitioning, especially when they are jointed by one or other of the metal supports available, of which two examples are shown in the accompanying illustration. The weight of the panels is about 2 lb. per sq. ft., and the compression strength 8·8 tons per sq. in. The requirements of B.S.S. No. 476 are satisfied as regards non-inflammability, and it is claimed that the material is unaffected by water, brine, oils, spirits, and by all but the strongest chemicals. It is also resistant to vermin and fungi growth.

When sound insulation is required, the cavities can be filled with sand or other suitable filler, the insulating value of a 14 in. brick wall being obtained if a double partition is used. The sound reduction factor, in decibels, is 22 for the unfilled partition, 40 with sand filling, 35 with foamed slag sand filling, and 57 can be reached if a double partition is used, with $2\frac{1}{2}$ in. spacing and glass silk blanket between, with the cavities of the panels filled with sand. For sound absorption, a special acoustic panel is made, in which a standard panel has one face perforated with $\frac{1}{8}$ in. diameter holes at $\frac{1}{2}$ in. centres, the cavities of the panel being filled with kapok enclosed in scrim cloth. This gives a sound absorption coefficient of 0·90 at 1,000 cycles per second, thus making the panel suitable for the ceilings and walls of cinemas, theatres and similar auditoria.

For heat insulation, with an unfilled panel, the K value is given as 0·95 B.Th.U. per sq. ft. per hour for 1° F. difference in temperature of the two faces, which can be reduced to 0·80 B.Th.U. if the cavities are filled with a suitable material, such as glass wool.

The Company also make solid laminated plastic lining sheets of various thicknesses and in various finishes, one finish having an embossed surface marketed under the trade name of 'Chequerplast'. The material is manufactured by Holoplast Ltd., of New Hythe, near Maidstone, Kent.

Insulation. A great deal of attention is now being given to the problem of making technical information available to architects, for it pours out in a stream difficult of absorption. Thermal insulation is a subject on which much has been written in various directions. The importance of adequate insulation, amplified by the fuel position, has led to the formation of the Structural Insulation Association, with headquarters at National House, 14 Moorgate, London, E.C.2. Their aim is to provide a source of general information about the structural insulation of domestic and industrial buildings, and the availability of materials. The Association have issued a card giving various insulating materials, with a general description, weight, thermal conductivity, form of supply, standard sizes and thicknesses. This at least is one step towards convenient classification.

Summary Report of the Ministry of Works. To those who have grown old in the practice of architecture this report will call to mind the old Office of Works; to those who are young it will be of interest as it sets out the functions and activities of the present Ministry of Works. The report deals with the period 9 May 1945 to 31 December 1946, and is published by H.M. Stationery Office at 1*s.*, the reference number being Cmd. 7279. The pamphlet states that it is the first report of a Minister of Works, and therefore a brief history is given of the origins and functions of the Ministry, which was set up in September 1940 as the Ministry of Works and Buildings, and after a short period of combination with planning, became the Ministry of Works in 1945. In addition to taking over the responsibilities of the old Office of Works, the new Ministry deals with the operation and development of the building and civil engineering industries and the production and distribution of building materials. The report does not attempt to give a full description of all the Ministry's activities during the period under review, but summarizes the work of the Ministry under the two following main divisions: Central Control of Building and Civil Engineering, including the formulation and control of the national building programme; assistance to the building and civil engineering industries; production and distribution of building materials; and scientific research into building and civil engineering. The second main division is Works and Supply Services, covering the supply of accommodation, furniture and equipment for the Civil Services; the acqisition of land, the design, erection and maintenance of buildings, including the Royal Parks, ancient monuments and historic buildings, museums and art galleries.

Part 2 deals with the National Building Programme, and describes the introduction of those architectural-household words W.B.A. and W.B.B., and also of the system of building licences provided under Defence Regulation 56A. The British Standards and Codes of Practice are referred to, as well as the Post-war Building Studies. Part 3 is concerned with buildings for the Government. Part 4, supplies of furniture and equipment. Part 5, clearing up after the war; and Part 6, other services.

Space does not allow even a summary of all these Parts, but as the activities of the Ministry of Works are of such vital concern to architects they are recommended to buy a copy of this summary report and acquaint themselves with the scope and powers of the Ministry.

A New Drawing Material. A material called Ethulon P.M. has been put on the market, described by the makers as a plastic film ·005 in. thick, specially evolved for use as a tracing material. One side of the material has a smooth matt finish free from grain, taking ink and pencil well and not requiring any preliminary treatment. It is claimed that the ink does not chip off when the material is creased, although erasures can be made quite well by the common method of using a razor blade, and the portion erased can be drawn upon again without the correction showing on prints. Further claims are that it will not warp or cockle under extremes of humidity, and that if water is sprinkled on it and allowed to dry off it will not leave any trace, as the material remains true to scale under all conditions. Ethulon P.M. is available in rolls 10 yds. long by 30 in. wide; it is made by Messrs. May and Baker, Ltd., of Dagenham, Essex, and is distributed by Messrs. M. and B. Plastics Ltd., of 3, Wimpole Street, London, W.1.

Solid Fuels Appliances. The Coal Utilization Joint Council have issued a booklet, under the title *Modern Solid Fuel Appliances*, giving illustrations of various types of fires, water heaters and cookers, with a table of 'justifiable increase in price of appliance corresponding to a given annual saving in fuel, for 10, 15 and 20 years "appliance life".' This is an important aspect of heating, from the long-term point of view. Copies may be obtained from the C.U.J.C., 54 Victoria Street, London, S.W.1. Other publications of the Council are the *Newer Heat Plans for Housing*, and *Fuel Stores for Small Houses*.

Practice Notes

Edited by Charles Woodward [*A*]

IN PARLIAMENT. Asked if he would state to the latest convenient date the total amount of payments made under the War Damage Act where repairs or rebuilding have been carried out and the total administrative costs of the War Damage Commission to the same date, the Financial Secretary to the Treasury replied: Up to 31 January last payments in respect of work which has been carried out totalled about £508,500,000. Total administrative expenses of the War Damage Commission in respect of all their duties since 1941 have totalled about £6,800,000 to the same date, excluding allied services rendered by other Departments. (2 March 1948.)

Near-Ripe Land (identification). Asked what progress is being made with the definition and identification in particular cases of near-ripe land for the purposes of the Town and Country Planning Act 1947 ; what procedure is being adopted in this matter; and whether Parliament will have any opportunity of pronouncing upon it before the Treasury Scheme referred to in Section 58 of the Act is considered by Parliament, the Minister of Town and Country Planning replied: Identification cannot take place until after 1 July, as no claims can be submitted before that date. There will be consultation with interested parties in due course. I hope thereafter that it will be possible to make a statement and the normal opportunities of raising the matter in debate will arise. (6 April 1948.)

MINISTRY OF TOWN AND COUNTRY PLANNING. Statutory Instrument, 1948, No. 401, is a Regulation issued by the Minister and made under section 28 of the Town and Country Planning Act, 1944. It prescribes the terms and conditions governing the use of land, consecrated or otherwise, acquired or appropriated for the purposes of the Act, and occupied or formerly occupied as churches, places of religious worship or burial grounds, including conditions governing the removal and reinterment, the treatment and removal of memorials of any kind and the expenses incidental thereto. (The Town and Country Planning (Churches, Places of Religious Worship and Burial Grounds) Regulations, 1948, No. 401. Obtainable at H.M. Stationery Office, price 1*d*.)

In Circular No. 39, dated 16 March 1948, addressed to Local Authorities in England and Wales, the Minister has given advice in respect of Limitations on Land Acquisitions for Planning Purposes during the present period of restrictions. The Circular has been drafted with reference to the 1944 Act, but the same principles will apply to compulsory purchase orders or acquisitions by agreement under the 1947 Act when this comes into force and so long as the present restrictions on labour and materials continue.

The Ministry have issued a further 'Bulletin of Selected Appeal Decisions', being the Minister's decision in typical Town Planning appeals. It is obtainable at H.M. Stationery Office, price 6*d*. net, and is No. 2, dated December 1947.

The Town and Country Planning (Making of Applications) Regulations, 1948, have now been made under Sections 73 and 102 of the Town and Country Planning Act, 1947. (1948 No. 711.) Obtainable at H.M. Stationery Office, price 1*d*. The Regulations come into operation on 1 July next.

Building Repair Licences (Limit). Asked whether, in view of the impending unemployment in the building and decorative industry, he would raise the present limit of £10 on work which may be carried out without a licence, the Minister of Works replied: The present licensing period during which the £10 limit operates will expire on 31 July next, and the arrangements subsequent to that date are under consideration. Meanwhile, I draw the hon. Member's attention to the statement I have made today with regard to the issue of licences to avoid unemployment among building workers. (15 March 1948.) (This statement is similar to that in Ministry of Health Circular 40/48, referred to under that heading in these Notes.)

NATIONAL JOINT COUNCIL FOR THE BUILDING INDUSTRY. The settlement adopted on 20 October 1947 in respect of operatives' wages included agreement to adjust the Sliding Scale Clause—Rule 11 (*b*) (i)—in order to relate it to the new Retail Prices Index instead of the old Cost-of-Living Index, on the understanding that no change in standard rates would be involved in the changeover, that the first Review would be based on the first twelve months of the operation of the Retail Prices Index, and that the Annual Review would be resumed in January 1949. At its meeting on 28 January 1948 the National Joint Council decided that as from November 1947 the Sliding Scale Rule will be related to the Retail Prices Index instead of the old Cost-of-Living Index. The Index of Retail Prices can be obtained from the offices of the National Joint Council.

At its meeting on 28 January 1948 the National Joint Council decided to make the following additions to National Working Rule 1:

For qualified tubular scaffolders as defined, 3*d*. per hour below the current standard craftsmen's rate.

Extra payments under National Working Rule 3 to be made to tubular scaffolders when engaged on the erection of prefabricated gantries (other than of tubular metal) of 1*d*. per hour.

These additions to the Rules operate as from 1 March 1948, and, under the R.I.B.A. Form of Contract, will affect the adjustment of the contract sum in tenders delivered before that date.

MINISTRY OF HEALTH CIRCULARS, Circular L.R.L. 7/48, dated 5 March 1948. addressed to authorities in the London Region informs them that the distribution of large slates will be discontinued under the weekly allocation as from 22 March. Slates 13 in. or more in length must not be used for new building or in cases where a damaged slate roof has had to be completely stripped.

Circular 38/48, dated 15 March 1948, refers to the Requisitioned Land and War Works Act, 1948, and the amendment of the basis of compensation payable under the Compensation (Defence) Act, 1939. Claims relating to properties requisitioned after the passing of the 1948 Act will be considered on the new basis, and claims will also be considered for increased rental compensation in regard to properties requisitioned before the Act came into force. Councils are asked to acquaint owners of the provisions of the new Act by the issue of public notices or of notices in the local press, and in any event to notify owners individually. Claim forms must be completed and submitted by 19 August 1948, and the form should be obtained from the Authority which holds the property on requisition.

Circular 40/48, dated 15 March 1948, addressed to Housing Authorities in England, refers to licensing of maintenance, repair and minor works, reconditioning of occupied premises, conversions and adaptations. This is in relation to the recent White Paper on capital investment in 1948, which states that 'It is implicit in the object of the investment review that the volume of maintenance and small works in 1948 must continue to be strictly controlled, since any significant expansion of this class of work would clearly impede the transfer of resources to more essential purposes'. If as a result of the restrictions it is found that more operatives are available than in a corresponding previous period, the possibility of alternative employment on essential work will be considered, either in the building industry or other industries. Where such alternative employment is not available, the Regional Building Committee will consider the volume of work that may be licensed or authorized additional to the levels previously agreed at Zonal Conferences or otherwise. The Ministry of Labour will advise the Regional Director of the Ministry of Works of any actual or imminent unemployment among local building operatives. The issue of additional licences must not result in work of a luxury nature. Work required under a Statutory Notice should be licensed with as little delay as possible.

The Electricity Commission have recently instructed the Supply Undertakings to co-operate in restricting the demand for electricity from non-industrial consumers more particularly by limiting to essential needs the connection of new supplies and the provision of appliances on hire or hire-purchase. In future, therefore, confirmation is to be obtained that the Electricity Supply Undertaking is willing to connect and supply before a licence is granted. Regard should also be had to the materials likely to be required.

Sanitary-ware, baths and pipes are scarce, and the demand for these materials for the large number of new houses now

being completed month by month and for the provision of essential replacements or for the installation of amenities in premises to be converted into flats, leaves only a small margin of supplies available for the improvement of amenities in houses where such work is either necessary or desirable.

Proposals for the reconditioning of existing houses which involve only such work as repairs to the damp-course, elimination of dry rot, repairs to roof or structure or the provision of an additional bedroom or bedrooms, should be licensed in so far as room can be found within the monetary licensing ceilings. Applications for other forms of reconditioning work involving the scarce materials above referred to in houses occupied by or intended for agricultural workers must, for the time being, be given preference.

Licences for conversions or adaptations may be issued where small amounts of controlled materials are required, particularly timber. Less than one-fifth of a standard of softwood should normally be required. The house now capable of occupation as a single unit which can be converted into not more than three separate units, may be licensed where the cost is less than £500 for each *additional* unit, i.e. £1,000 total cost. Other buildings not now capable of occupation as houses may be licensed where the cost does not exceed £500 per family unit, and larger houses can be similarly treated. Schemes exceeding these limits should be referred to the Principal Housing Officer for special consideration.

Unemployment or prospective unemployment of painters and decorators will be dealt with as stated under the above paragraph referring to the volume of work that may be authorized as agreed at Zonal Conferences.

A licence may now be issued for the erection of small prefabricated garages, huts, greenhouses, etc., which only require the use of cement and where there is no paid labour. No authorization will be given for controlled materials in these cases.

In the Quarterly Returns of alleged contravention of Defence Regulation 56A the Authority is now asked to give names and addresses of persons against whom proceedings have not been instituted, but who have been warned about offences against the Regulations.

Circular L.R.L. 9/48, dated 25 March 1948, modifies the arrangements for building licensing announced in Circular 40/48, dated 15 March 1948. As painters and decorators are comparatively freely available in the London Region and because the arrangements for this class of work outside the allocated quotas have been discontinued, a temporary increase of 25 per cent in licensing quotas in the London Region is authorized with effect from 1 April 1948. Local authorities should, however, appreciate that it is essential that this increase in the extent to which licences may be issued within the allocated quotas should not result in an increase in the total value of licensed work in the Region and having regard to the comparatively large numbers of painters and decorators included in the total building force of the London Region, local authorities should see that at least 25 per cent of the total value of work licensed is painting and decorating work. Should it appear in any area that more operatives are becoming available for licensed maintenance and repair work than can be employed in the area, consultation will take place between the Ministries of Works and Labour and National Service and the Ministry of Health to determine in the light of the principles explained in Circular 40/48 whether any change in licensing quotas should be authorized. Any such changes will be notified to the local authorities by the Ministry of Health.

With regard to licences for conversions and adaptations and the specified limits in Circular 40/48 beyond which licences may not be granted without reference to the Ministry of Health, it is appreciated that a large proportion of work of this nature in the London Region includes repair of war damage. The Minister of Health accordingly agrees that in those cases where the proposals include repair of war damage representing at least 25 per cent of the total cost of the job, the amounts of £500 referred to in Circular 40/48 may be increased to £750. Conversion proposals in excess of the above limit should be submitted to the Ministry of Health with the present occupation, the number of additional families to be provided for, the total estimated cost including war damage, cost of repair of war damage or making good after derequisitioning, name and address of the contractor and the amount of softwood required.

THE TOWN AND COUNTRY PLANNING ACT, 1947. Town and Country Planning Law, by J. Kekwick, Barrister-at-Law, and Robert S. W. Pollard, Solicitor (Stevens and Sons, 119 Chancery Lane, London, W.C.2. Price 4*s*., postage 3*d*.).

This book deals with the Town and Country Planning Act, 1947, and is set out in the form of a summary. It is not a textbook containing references to cases, but is a useful guide to the Act written in a way that will appeal to the lay mind.

The National Federation of Property Owners have issued a booklet containing Questions and Answers which explain some of the problems arising under the new Planning Act. This is a useful publication and can be obtained at the Federation's offices, St. Stephen's House, Westminster, S.W.1, price 1*s*. 2*d*., post free.

Messrs. Sweet and Maxwell, of 2 and 3 Chancery Lane, W.C.2, have just published the first number of a new periodical entitled THE JOURNAL OF PLANNING LAW. The Journal is to be issued monthly, this first number being for April. The subject matter includes articles dealing with the various problems that will arise under the 1947 Act, written by barristers, solicitors and surveyors. There is a Foreword written by the Right Hon. Lord Justice Scott. The subscription is £1 2*s*. 6*d*. up to December 1948, and thereafter £1 10*s*. per annum.

LAW CASES. Vendor and Purchaser—Contract for Sale—Exchanging Contracts. In Eccles *v*. Bryant (1947), 2 All. E.R. 865, the Court of Appeal held that where there is an agreement subject to contract, the contract does not become binding until (in the absence of express agreement to the contrary) contracts are actually exchanged.

Trespass—Repair. In Hewlitt *v*. Bickerton it was held that there was no doctrine under which a person had a right to trespass on another's land in order to repair his own buildings or salvage his own business. (ESTATES GAZETEE 6 December, 1947.)

Building and Engineering Unlicensed Work. In Leach *v*. Percy it was held that a sum claimed for work done in contravention of the Control of Building Operations Order was irrecoverable. (ESTATES GAZETTE, 20 December 1947.)

Compulsory Purchase and Requisition. When notice of a compulsory purchase order is served on an owner of land he is deprived of his right to dispose of the land to any other purchaser and therefore is entitled to interest on the purchase price from the date of the service of such notice until he receives the purchase price. (Merrett *v*. Hemel Hempstead R.D.C. (1947), 14 L.J.N.C.C.R. 269.)

Compensation for Goodwill. Landlord and Tenant Act, 1927, sections 4 and 5. When considering a tenant's claim for compensation for goodwill under s. 4 (1) of this Act, it is not permissible to take into account so-called 'cat' goodwill which is part of the goodwill attributable to the site as distinct from the tenant's own business carried on on the site.

'In our judgement, the phrase "cat" goodwill is one which, if we understand its meaning aright, is apt to be misleading . . . . . and, if it is true that a cat has nine lives, we express the hope that in relation to the Landlord and Tenant Act it has lived the last of them and may now be decently interred', per Evershed, L.J., Mullins *v*. Wessex Motors (1947), W.N. 316; 63 T.L.R. 610; (1947) 2 All. E. R. 727, C.A.

In the same case the Court of Appeal decided that 'If a tenant proves that, by reason of the business carried on by him, the letting value of the premises for the purposes of a similar business has been enhanced, and if. . . . . the landlord does not intend to use the premises for a more profitable purpose, then the fact that the landlord proposes to use the premises for his own purposes, and, therefore, not to avail himself of the added letting value which the tenant has created, does not, of itself, defeat the tenant's right to compensation.'

British Standard Codes of Practice. The following Codes have now been published in final form: The Structural Use of Normal Reinforced Concrete in Buildings. CP 114 (1948) General Series. 5*s*. post free. Sound Insulation (Houses, Flats and Schools) CP. Chapter 3 (1948) Functional requirements of Buildings. 2*s*. post free. Obtainable at British Standards Institution, 28 Victoria Street, S.W.1.

Correspondence

SIR CHARLES REILLY

Sir,—Those who knew 'Professor Reilly' will understand the sense of loss felt by one who was privileged to be his student, and honoured by his friendship. They would appreciate how, in the still vital and busy last days of his remarkable life, he was able to write to his young protégé in Canada as many letters as I have been here months.

In the business of finding a foothold in a new country, those letters have contained the spirit of creative encouragement which has led me on to accomplish what little I have been able to do so far. I shall miss them, but I will remember the spirit of the great man who wrote them.

I do not feel alone in saying that England has lost an irreplaceable personality, and I have lost my best friend—for we are many. Unworthy as we are, let us seek to share the spirit which 'Prof.' spent so generously: his high dignity; his deep humanity; his constructive criticism, always given with good humour and telling wit; his eternal youth and buoyant vitality, which will yet outlive the youngest amongst us.—Yours,

G. ENGLESMITH, B.ARCH. (LVPL.) [4]

PRIZES AND STUDENTSHIPS CRITICISM

Sir,—It was obvious from the first that Mr. Tubbs' paper on the Prizes and Studentships was pregnant with controversy, and now in the JOURNAL for March we find that it has produced three distinct issues. I do not think I am entirely alone in disagreeing with all those involved with the exception of Mr. Risdon.

Mr. Eden, for instance, raises the question of Style. Apparently attempts to formulate a contemporary, natural way of building are now quite passé and will be displaced by a New Look formulated by those who understand philosophies and conditions entirely differing from our own. Now the answer to this is obvious, and I do not wonder that Mr. Eden will not enter into a discussion of it. Neither would I.

I partially agree with Mr. Erith, that juries comprising the older generation tend to base their opinion on the plan to the neglect of the elevation. However, I feel that if, in the instance under review, the jury *had* based their assessment upon the elevation, Mr. Mullins might not have achieved honourable mention, which would have been a retrograde step. In the present circumstances, when the collective approach to æsthetics is, to say the least, in a state of flux, it is politic, if nothing else, to concentrate upon the plan, which is assessed mainly upon a basis of logic.

With regard to the third, and original, issue, I do not know whether I disagree with Mr. Tubbs or with the Editor. The paper which was printed in the JOURNAL was, in my opinion, entirely sound; I am in full agreement. Its philosophy was, in fact, an integral part of my architectural education. The importance of the life force in architecture, generally known under the Latinized term 'vitality', is stressed by Le Corbusier, Wright, Gropius, and many other modern writers, not to mention Lethaby and Ruskin. It is not necessary for the critic to convince us that life is preferable to stagnation; but we are very keen to know what specific examples of bombast, clichés and travesties have caused him the most dismay. When, for example, is an axial layout a mere cliché, and when is it a formal element contrasting to an irregular landscape?

It is not necessarily desirable to print the detailed criticisms in the JOURNAL since their audience is so limited, but I feel sure that there would be more enthusiasm for these competitions were each competitor to know that his work would be rewarded by at least a dozen lines of criticism on a typewritten or roneoed sheet. In my own case, circumstances made my chances of winning the medallion microscopic, but I pressed on with the final drawings in the hope of hearing some useful criticism, however harsh. Not having received any, I feel somewhat soured.—Yours faithfully,

D. M. GOODACRE [4]

A.S.B. LECTURES

Sir,—In the discussion which followed the last A.S.B. lecture I ventured to criticize the general standard of the papers given in the last two sessions. I should like now, with your permission, to be somewhat more constructive and show how, in my opinion, improvements could be made.

There are many who believe, as I do, in the potential value of A.S.B. lectures; but lately there have been complaints that the potentialities are not being realized. The chief criticism is that too many of the lectures have been over-generalized and unspecific. They have stated facts and put forward ideas with which most people are familiar. What is wanted is something with more 'meat' in it. This is only possible if the lecturer is enabled to concentrate on one aspect of his subject and present it in detail; which means that if the subject is to be fully covered it will need to be developed in more than one lecture—and probably by more than one lecturer.

It follows from this that no lecture can be regarded as a separate entity, but each must be co-ordinated with others in the series. From this it will be seen that the need exists for a strong editor who can design a unified syllabus. It would be the editor's responsibility to limit precisely the aspect of the subject to be covered by each lecturer and, where undesirable overlapping occurred, to call for revision. Two difficulties remain: first to decide what subjects should be dealt with. This depends on the sort of audience for whom the lectures are to cater—which is the second difficulty.

I think that the audience consists of people who have begun to realize that they must revise their way of approach to architectural problems because of the great changes that science is producing in building practice. But they are not sure what form this revision must take because they are confused about the way science itself works. So they want to know how science differs in its aims and methods from orthodox architectural technique. And they want specific information on the way new scientific developments are likely to affect building.

May I suggest, therefore, that the first subject for a *series of lectures* should be simply 'Architecture and the scientific method'. To show how it could be treated I have outlined the following syllabus. In this syllabus I have avoided the word 'lecture' and replaced it with 'meeting' because I think informality and free discussion should be the keynote.

1st meeting: 'The development of scientific method in building'. An account of the engineer-architects of the early 19th century —e.g., Telford and the Brunels: how new problems were approached by exact observation and methodical analysis and solved by objective application.

2nd meeting: 'The scope and nature of scientific method'. For this meeting the services of both a scientist and an architect should be combined. The scientist would explain the objects and technique of laboratory research. The architect would show how scientists' methods need to be adapted in order to be applicable in the architectural field.

3rd and 4th meeting: 'The significance of new performance standards'. These two lectures should explain how new performance standards are the result of scientific study, and should draw attention to the impact of new knowledge. The Post-war Building Studies offer a number of specific examples, e.g., a paper could be given reviewing changes in the function of the wall; changes, that is, resulting from new requirements of thermal insulation, new knowledge of foundations, new materials and so on.

5th meeting: 'Recent experimental work'. From time to time scientists publish accounts of their researches; the architect should learn to interpret such accounts and recognize their implications, e.g., Mason on 'House heating experiments'. (R.I.B.A. JOURNAL, October, 1947.) Much of this article is a description of experimental technique which (though invaluable to other workers in the same field) does not directly interest the architect. The results of such experiments are, however, extremely important and at least one meeting in a series should provide an opportunity of discussing their significance in detail.

Sessional Paper: I think the established tradition is a good one. The sessional paper should continue to deal with some broad philosophical aspect of architectural science.

The foregoing suggestions are based on the existing arrangement of having five monthly lectures and one sessional paper. I think, however, that the system of weekend courses should be tried once more.

This would enable each course to be better co-ordinated. It would ensure that the audience was the same throughout and encourage longer discussion. If the course were of real value no-one would begrudge the loss of a week-end—or even the payment of a small fee to cover staff costs, etc. —and more members from outside London could enrol for the course.

As for the lecturers themselves: is it not possible that the most eminent are not always the most suitable? If it is felt necessary to have the attraction of a well-known personality would it not be better for him simply to take the chair?

Of course these are my own views only. But I hope that by putting them forward I may provoke others into making suggestions which will enable the A.S.B. to gauge opinion on the subject.

Yours faithfully,

GUY B. ODDIE [*A*]

Suggestions are invited—Editor.

COMPETITIONS

Sir,—While the almost complete blank in architectural competitions persists, it seems a good opportunity to consider changes in their organization.

I therefore suggest that the names of assessors should not be published until all designs have been submitted. This would, I believe, assist both competitors and assessors. The competitor—even the most independent—is at present conscious of the predilections of the assessor and there is a serious temptation to pander to his foibles and known preferences in design. The assessor, on the other hand, would be free from the embarrassment of selecting from amongst designs some of which have been adapted to his personal tastes.

The results of this slight change in routine would, I believe, give much greater freedom of design and choice to the benefit of the whole system.

One other condition which should be made in all competitions approved by the R.I.B.A. should be that, after the assessors' award, *all* designs submitted should be publicly exhibited. Particular point is given to this by the recent Liverpool War Memorial award where over eighty designs were submitted and only eight were chosen for exhibition.—Yours faithfully,

ANDREW CARDEN [*A*]

Mr. Carden's letter was forwarded to Mr. K. M. B. Cross, Chairman of the Competitions Committee. Mr. Cross replies:—

Sir,—Regarding Mr. Andrew Carden's letter suggesting that the names of assessors should not be published until all designs have been submitted and also that all designs submitted should be publicly exhibited, I have the following observations to make:—

This is by no means the first occasion on which the anonymity of assessors has been proposed. In the past, however, competing architects have preferred to know the name of the assessor, and I believe that view still generally prevails. I do not think that a good assessor would be influenced one way or the other by those competitors who try to 'play up' to his supposed predilections in design. The very real practical difficulty of preserving the anonymity of an assessor has also to be remembered.

In regard to the exhibition of the designs, it is one of the regulations governing the promotion and conduct of architectural competitions that all designs and reports included in a competition, together with a copy of the assessor's award, should be publicly exhibited for at least six days. During the war this requirement was relaxed in cases where there was insufficient accommodation for the exhibition of the designs, and it was suggested that the drawings be shown in relays. The Competitions Committee has not agreed to any further relaxation of this regulation, and in fact has used every endeavour to see that it is carried out. —Yours faithfully,

KENNETH M. B. CROSS [*F*]

BLEACHERS

Sir,—What are 'bleachers', which I find on the hall plans of the American schools in the March JOURNAL? Yours faithfully,

HOWARD V. LOBB [*F*]

Editor's Note. We wrote to the architects asking this, but did not receive their reply before going to press. Bleachers are seats for spectators.

THE REDEVELOPMENT OF CENTRAL AREAS

Sir,—The Ministry of Town and Country Planning has issued a directive under the above title (H.M.S.O. 12*s.* 6*d.*) advising local authorities as to the form and substance of Town Planning schemes for the post-war rebuilding of cities and towns which can expect to receive official approval.

It recommends that the all-important restrictions on overbuilding to prevent undue obstruction to light and air should be fixed by making compulsory a new official 'daylighting code' for offices. This code is stated to be somewhat complex and for reasons of space the reader is referred to an article describing it in the issue of the R.I.B.A. JOURNAL for August 1947 (Vol. 54, pp. 491-499). At that time the daylighting code, which entails the reduction to suburban lines (35 degrees across streets) of the obstruction caused by central urban rebuilding, had been recommended in the Report on the Reconstruction of the City of London only as something which might be made obligatory at some future date after it had been voluntarily tried out in practice by far-seeing ground landlords like the Corporation itself. The explanatory article was, therefore, not particularly urgent.

Now that the article has been officially invested with an importance which is little short of statutory, it may be timely to point out that in it Figs. 5 and 14 have been accidentally transposed. Until this is corrected the relative letterpress is, of course, quite unintelligible.

It would be desirable to know whether the use of the unsuitable form of the Waldram measuring diagram, recommended in the article, is still officially supported, in spite of the protest in the issue of the R.I.B.A. JOURNAL for September 1947 (Vol. 54, No. 12, p. 569).

Not only does the special form of the diagram involve unnecessary inaccuracy, but its intricate setting out entails so much tedious labour that its compulsory adoption would tend to create a virtual monopoly for the B.R.S. of town planning problems with regard to permissible obstructions.

The simple form of measuring diagram in common use and hitherto recommended by the D.S.I.R., can, of course, be set out by any school boy.—Yours faithfully,

PERCY J. WALDRAM [*L*]

COLOUR RESEARCH

Sir,—I was interested in reading Mr. Hartland Thomas's paper, particularly his comments on colour. I have been engaged in research into colour questions for some time and I am now teaching a theory based on my conclusions to the students of the Welsh School of Architecture.

I have established a tempered series of hues within which harmonic scales can be constructed; in these scales the parts have a simple mathematical relationship to a specific reference hue. The latter may be any one of the 24 degrees of the main series. The complete series are each formed of seven hues, of which the last three plus the original reference hue make up the first four of an entirely new scale. In this way it is possible to modulate from one colour scale to another, either in one scheme or throughout a building in a series of linked schemes.

These harmonic scales overcome many of the shortcomings of the colour circle theory, particularly the limitations imposed by it on the inter-relation of scales. My theory links up with the Munsell system so widely used in the U.S.A. and accords with the theory of colour mixture adopted by the C.I.E. for colour measurement.

It is a common practice to mix two hues to produce a third related hue, but in fact this third hue may not be in a harmonious relationship to the initial pair, because it may vary in the spectral series anywhere between the two constituents.

In my practice, black, white or both mixed with a hue are the modifying factors which give a variation in quality of the hues which will therefore remain harmonically related. In this way a constant control is maintained over the chromatic qualities of the hues. I have used the eight Ostwald standard hues which are on sale generally, to standardise the tempered series of 24 hues, though these differ from Ostwald's 24 standards.

I hope to publish the results of my research and I should welcome collaboration with any architects who may be interested, so that I can collate the results of controlled experiments carried into practice.—

Yours faithfully,

R. A. RATHBONE [*A*]

Book Reviews

The Renaissance of the English Public House, by *Basil Oliver*, F.S.A. 9¾ in. 181 pp. + pls. text illus. Faber & Faber. 1947. £1 5*s*.

In this book, very readable alike to technician and layman, the careful and enthusiastic work of a specialist in his subject, both by environment and training, Mr. Basil Oliver [*F*] covers thoroughly the comparatively little known ground of Public House design and equipment; his 11 chapters of written matter, combined with over 100 good illustrations and nearly 80 plans, giving a comprehensive illuminating survey of his subject.

Inns and Wayside Taverns have been English national institutions since earliest times, and it is essential that enlightened research and experience continue to be brought to bear on their design, to eliminate past abuses and fit them as healthy centres of modern English life and recreation.

Mr. Oliver's book reviews improvements in the Public House during this century, both through the efforts of the Brewers themselves, and with the aid of Government Commissions, noting the first instances of State ownership, and stressing the importance of amenities and their contribution to sobriety, contrary to previously held erroneous views to the contrary.

The chapters on planning, design and practical details set out clearly the complex problems of meeting the many regulations of the various authorities concerned, also the pitfalls and particular requirements of this highly specialized trade, of which the cardinal points and technical details are excellently brought out, while the selected plans (a few of these perhaps a little small in scale to read), show well chosen solutions of the special problems involved.

Chapters follow on pioneer efforts from different parts of the country, individual characteristics and requirements of various localities, suburban decentralization schemes under enlightened local legislation, and other innovations.

The concluding sections give good examples of modern design, also of reconstruction of old buildings, historically or intrinsically valuable, with reference to the psychological importance of applied art and decoration, and lastly, to the introduction into Public Houses, between the two wars, of organized and well sponsored social amenities, music and recitations.

All told, the author has produced an attractive and informative book, invaluable to anyone concerned in the improved design or management of the English Public House. R. S. NICKSON [*F*]

Art and the Industrial Revolution, by *Francis D. Klingender*. 9¾ in. xv + 232 pp. incl. pls. + xv pls. Noel Carrington (Transatlantic Arts), 1947. £1 1*s*.

This book was suggested to the author by the Silver Jubilee Exhibition arranged by the Amalgamated Engineering Union in 1945. The suggestion has produced fine fruit; Mr. Klingender's book is good to read and excellent to look at, for it is illustrated with 106 monochrome and 15 colour reproductions, mostly from 18th and early 19th century drawings and engravings.

All these illustrations are closely related to the text and are well chosen from a wealth of possible material. The publishers and printers are to be congratulated particularly on the quality of the colour plates in what is, generally, a well-produced book. It is adequately annotated and has a good index; a few errors have found their way past the proof-readers, e.g., Millbank for Millwall (p. 128) and Halévie for Halévy (pp. 156 and 7).

Mr. Klingender has broken new ground and has presented us with thoughts and relationships which have long called for exposition. He shows the influence of the industrial revolution on British art of the time and includes, by way of illustration, many quotations from prose and poetic literature to augment the illustrations from the visual arts of painting, drawing and modelling. He traces the effects which the rapid development of mechanized industry had on art; its exultant initial reception of the new era, its later despair at misuse and lastly the more recent attitude of escapist idealism in the middle and later parts of the 19th century.

While the book does not pretend to be an essay on 'industrial art' as we know it today, it does touch on the subject, relating also the artistic expression of the industrial revolution to the modern 'documentary' methods of the film and broadcasting. The author makes a few excursions into contemporary phases and reactions on the Continent; their incompleteness makes them of little value and they could well have been omitted, perhaps to be expanded in another work or in a later edition. Apart, however, from this minor criticism, the book is one that should appeal to all those interested in the trends of modern art and in its dependency on past thought and tradition; to architects especially, by reason of pages packed with interesting facts, references and comments, a knowledge of which is invaluable in any attempt to understand the Victorian era and the transition into the art and architecture of today.

S. ROWLAND PIERCE [*F*]

The Things which Are Seen. A Philosophy of Beauty. New Ed. By *A. Trystan Edwards*. John Tiranti, Ltd. 12*s*. 6*d*.

A 'philosophy of beauty' would have been considered a quaint idea between the wars, but now that the 'modulor' and golden rectangles are in the air, if not yet in the respectable office, Trystan Edwards' book may not be considered so unfashionable as when it first appeared, 26 years ago.

It should be possible, he says, to set down mathematically what constitutes beauty in this world. People are tired of artists and their utterly vague ideas which will never command universal respect till they reach the precision of engineers' formulae. This seems reasonable, but inevitably he is first confronted with the general question, 'what is all this beauty business about anyway? So the author, sifting it out, finds in daily life a natural order of precedence of items generally thought to require some beauty in them. This order, novel, surprising and slightly damaging to the artist's pride, is: (1) The cultivation of human beauty; (2) The art of manners; (3) The art of dress; (4) Architecture (including design of knicknacks and landscape). These are the primary arts followed by the secondary: painting and sculpture. Music and literature are not mentioned.

This revaluation will be generally dismissed as amusing bosh, though the detailed arguments supporting it are entirely valid for a civilized society and reading them I thought immediately of Sweden, or there is ancient Greece, Trystan Edwards' own example. Look at the suggested order of importance of these items again, then at Sweden's elegant people, the baths and gymnasia, and then at Swedish painting compared to her architecture.

Part two deals with the grammar of design, the canon of number (duality, etc.), punctuation (the bottom of sailor's trousers, etc.), inflection (symmetry and the correct angle to tilt your hat), formality and informality and so on. A grammar of some sort must form the basis of all expression and be taught to every student, but it should never remain rigid or the means of expression, speech, music or architecture will become mortified and embalmed. The diagrams explaining this grammar show the danger already.

Part three deals with the artist, the human agent of beauty in relation to society and its members, the statesman, biologist, historian, moralist, etc. This section is undermined by the intolerant attitude shown to psychology, due perhaps to a lack of revision since the first edition when Freud would tend to have been called Fraud. Part one, 'The Hierarchy of the Arts', remains the most interesting and valuable part of the book and from this, three years later, sprang the book 'Good and Bad Manners in Architecture', attempting less but succeeding more. The style of the present book makes it difficult to read, the frequent caption headings resembling so much any 17th century treatise on the same sort of subject, that instinctively one looks for the large stiff pages, the handsome letters and the leather binding. HERBERT TAYLER [*F*]

Land and Landscape, by *Brenda Colvin, F.I.L.A.* 8½ in. xii + 266 pp. + pls. John Murray, 1947. £1 1*s*.

It can be said at once that the subject of this book is one of the most critical of modern times. It is as important as any subject in medicine, for medicine is concerned with cure and this is concerned with prevention. Here is an aspect of biology that is the oldest of all the sciences and arts, and yet the least considered in the modern world. Miss Colvin begins: 'The control which modern man is able to exert over his environment is so great that we easily overlook the power of environment over man', and thereafter develops her subject on a truly wide scale. Let us first consider the author's qualifications to undertake a work that must have taken many years to complete.

Miss Brenda Colvin is a landscape architect of standing, and has consistently lectured in schools of architecture, town planning and horticulture, She has therefore the comparatively rare virtue of a fair balance of theory and practice. Her practice has enabled her to build up an immense fund of direct information, and her theory has encouraged her in extensive reading and philosophical study. Her counterpart in the United States is Lewis Mumford, who is far more advanced as a creator of ideas but is somewhat less of a realist. Mumford belongs to the armchair, Miss Colvin to the soil; without the idea of the former civilization may blow itself to bits or otherwise pass away; without the idea of the latter it would in any case perish in a week.

Miss Colvin's great work must first establish 'the power of the environment over man'. This calls for a profound study of biology, for her thesis, which is unanswerable, is that the landscape arts grow from the land sciences, and to separate the one from the other is impossible. So we have the impression of our planet in the beginning revolving through space and gradually evolving conditions which give rise first to vegetable and then to animal life, and so to man. It is not surprising that man's enjoyment of his environment is based upon the fact that he himself, like any plant, is a product of that environment; and like the plants, too, he is not a self-contained unit but part of a vast organism whose function is based on what we call 'the balance of nature'.

His own part in this machine is felt by man through his five senses. When his intellect is creating works that are in step with the machine, his senses tell him that they are harmonious; when they are contrary to or tampering with the machine, they are discordant. In principle productivity is beautiful, waste is ugly. The truth of this may be tested by the first emotions aroused by landscape; if they are discordant, then assuredly the landscape is scientifically bad.

Having established her basic theory of nature, Miss Colvin proceeds to develop it to the ultimate flowering of the civilizations including that of today. Her comparison of west and east gardens is masterly and significant: 'Their underlying ideas and philosophy are opposed, the one being based on human logic, the other on a mystic sense of life's unity in nature'. The scientific principles of garden and landscape design are the same throughout the world, but the arts arising from these principles are as manifold as the philosophies of mankind. In our own civilization Miss Colvin points to all the evils of land development that could so easily be altered to advantage to this and future generations; and it must be added that her plea for landscape beauty is not sentimentality. It is commonsense based on economics. We cannot afford to have an ugly landscape.

The book is clearly marshalled and presented, and is illustrated by excellent photographs and some charming line drawings by Cecil Stewart. The cover sheet is admirable. The style of writing is straightforward, but there is a certain dullness of phraseology that suggests that this new field has not yet found its literary medium. 'The intrusion of accidentals' is a beautiful and expressive phrase, but 'The Functional Use of Plant Material' is dim. It is a pity there is no bibliography, but acknowledgement is given in the text to such works as Professor Tansley's 'Vegetation and the British Isles', without which such a profound study could not have been made. Miss Colvin indicates that a new relationship of architecture and landscape architecture is upon us, and cites Sweden particularly for its sensitivity towards plants. Altogether this is a very considerable work, and one that should find its way on to the bookshelves of every architect. He may find limitations in Miss Colvin's approach to architecture, but such studies as that on the fourth dimension will be found both impressive and stimulating.

G. A. JELLICOE [*F*]

L'Architettura in Inghilterra, by *Enrico Tedeschi. Urbanistica e Architettura series. Bruno Zevi, gen. ed.* 8½ in. 174 + xi pp. + 41 pls. Florence: Edizioni U. 1947.

Few foreign authors have ever attempted to write a comprehensive account of architecture in England of all periods; fewer still have done so with the knowledge, understanding and accuracy shown by Enrico Tedeschi in this analytical survey. He covers all periods: Celtic, Roman, Saxon, Norman, Gothic, Renaissance, Neo-classic, 19th century romantic, and finally modern up to 1939. The Italian text which is written in straightforward style is illustrated with numerous pen-and-ink sketches and well selected photographs. Amongst the contemporary examples, these illustrations include the work of a number of foreign architects-of-passage, but English architects—and one engineer—are also fairly represented.

It is often said on the Continent that English architecture, generally speaking, lacks interest through being no more than a pale reflection of the big architectural movements centred elsewhere, such as in France and Italy. This book should do something to correct or at least qualify this contention.

R. E. E.

Oxford Replanned, *by Thomas Sharp* (Oxford City Council). 9 in. × 7 in. 224 pp. incl. pls. + (x) folding pls. Archl. Press, for the Council. 1948. 15*s*.

The critic of town plans is at a special disadvantage. It is unlikely that he is really intimate with the town in question. Even if he is, he cannot possibly know it as well as the planner. Furthermore, he has a sneaking suspicion that the planner (being only human) marshals the evidence like any good advocate so that it leads up to his own conclusion, and does not always weigh it with the absolute impartiality of a judge. Yet this is a suspicion which he lacks the knowledge to confirm. Very naturally, therefore, the critic sticks to generalities, notes that this particular plan upholds, or flouts, the principles in which he believes, and devotes most of his 700 words to its presentation.

But the things that matter least in planning are general principles and presentation. The vital moment, the creative act as it were, is when the planner, having set out his evidence, establishes thence the fundamental premisses from which the plan flows inevitably. In the case of Mr. Thomas Sharp's brilliantly lucid and persuasive plan for Oxford, it is at this point, at its hinge, that the critic suspects weakness. Oxford consists, as everybody knows, of two cities, joined by a single thread; the first a mediæval-to-Victorian university town between Isis and Cherwell, the second a minor Detroit on the long slope rising northwards from the river towards Headington. To restore and facilitate unity, or to accept and organize duality—that is the problem of Oxford. Mr. Sharp is for unity. All his eggs go into one basket, and are arranged there with the greatest skill and salesmanship. The advocates of duality are not converted, but hustled rapidly out of court. Yet at the end the fact remains that between Mr. Sharp's splendid new centre and the vast mass of Oxford's population stands the University, and between them the shortest route remains the High. Moreover, the right-angle of the High and the Corn, which innumerable motorists avoid by the undesirable Holywell short-cut, is by-passed in Mr. Sharp's plan not by somehow completing the hypotenuse of the triangle, but by *going round the outside*. Oxford is an L-shaped city, with a single bridge at its hinge, and one cannot feel that Mr. Sharp has seen it that way.

But then how can a traffic problem (and Oxford's is, above all, a traffic crisis) be solved on such miserably inadequate information? The planner laments the absence of an Origin and Destination Survey. In these circumstances he might reasonably have refused to proceed without one. Again he has been seriously handicapped by the University's apparently complete ignorance of its future size, area or organization. One can only hope that the assumptions which he has been forced to make will prove near enough to the mark not to vitiate his whole scheme.

It is interesting to note that Mr. Sharp does not believe in the precinctual form of shop planning, greatly though he admires its collegiate equivalent. The shopping centre consists of a series of boulevards with solidly built-up frontages.

It is particularly disappointing to feel these qualms about the plan's foundations when one is so enchanted by the superstructure. Of all the great contemporary schemes, this is the most visually sensitive and delightfully presented. Mr. Sharp, coming to the place from the outside, sees the streetscapes and skylines of Oxford with dream-like clarity. The book begins and ends with a series of aptly illustrated Trivia about Civic Design which may well prove even more valuable than the plan itself. Two examples :—

'The Oxford Back has certain special characteristics; a narrow tunnel-like quality, a shady disposition, a tendency to be frowned upon by blank walls, to be cobbled, to have a crooked figure, and to debouch

suddenly into an open space full of sunshine'.

'Oxford's street architecture can nowadays be seen only above a plinth of gleaming internal-combustion machines standing bumper to bumper. It is time that a revolution was made at pavement level. . . . What we must not do is to requisition the open areas rightly provided by earlier generations for public enjoyment and divert them to serve as garages for unused cars'.

Mr. Sharp is in fact no mere roundabout fancier, but a serious and eminent student of civic design. Moreover, he can write—wherein he has an unfair advantage over many planners. He can use anger and irony where they are needed. He has also been admirably served by his publishers and illustrators, and by some of Mr. Wainwright's finest photographs. Only the coloured reproductions of 18th-century water-colours seem to have suffered from some technical hitch.

Lovers of Oxford must now decide what they are going to do about this plan. Let them not be bothered too much by Merton Mall. Neatly and modestly landscaped it will be a famously beautiful road, and though it cuts the Broad Walk at a horrid diagonal, old elms are not of permanent significance. The problem of Oxford would not have reached its present crisis if there had been an easy solution, open to no objection. One may be uncertain whether this is the most logical of the alternatives. But one thing is certain. If it is sniped at from all directions, friendly and hostile, Oxford will get no plan at all. LIONEL BRETT [*A*]

Oxford Stone, by *W. J. Arkell.* 8½ in. 183 pp. 37 pls. + folding map, text diags. Faber and Faber. 1947. £1 5*s*.

Oxford Stone is a geological and historical account of the local stone which has been built into Oxford for the past thousand years. The interest to the architect is in the architectural consequence: the rubble walling which is the only use for the hardstone, and the decaying walls of freestone which were once finely worked ashlar.

The treachery of Oxford freestone was known in mediæval times, and the many buildings that survive from before the 16th century are of hardstone rubble with a minimum of dressed work at the quoins and jambs; the tragedy started in the 17th to the 19th centuries. This most prolific of all building periods, one in which all the colleges made additions to their fabric, unfortunately coincided with a taste for surface decoration: the demand for a complete façade of dressed stone exhausted the little that there was of reliable freestone and released upon Oxford a spate of inferior stone from untried seams, unselected, unreliable.

The position today is halfway between an immediate panic solution and a more thoughtful one. Clipsham stone, similar in appearance to some of the Oxford freestones but in weathering quality almost indestructible, has been used for patching and refacing since the end of the last century. It is, however, the only stone that is considered suitable, so that the Renaissance buildings, designed in two or three stones are being surfaced in a uniform colour and texture. Quoting Arkell in the particular case of Christ Church Library:

'The ravages of decay have had a levelling effect on the building but have not altogether eliminated the variety of colours and textures; in fact since each type of stone has its own particular form of decay some new differences have developed. Whether the æsthetic effect of Townsend's use of different materials meets with modern approval or not is irrelevant. The point is that if this building is to be refaced completely in Clipsham stone like the rest of Peckwater Quadrangle it will no longer resemble the building agreed to by the Governing body in 1716 and erected by Townsend. *A later generation may well maintain that it was as important to adhere to the original colours and textures as to copy the original mouldings and decorations* (my italics). The effect of the Clipsham in the rest of the quadrangle is admirable, but to close in this fourth side also with the same material unrelieved would destroy the charm and variety of the whole.'

To use the local stone today takes more courage than it did 200 years ago: the tendency in new buildings is to return to a rubble walling, but there is, for the searching, enough reliable freestone to repair existing buildings in the original material. There are two aids to the search, one the testing facilities of the Building Research Station and two, this book of Arkell's, which by analysing the buildings of Oxford in terms of the quarries that supplied them, makes possible an analysis of that stone—its resistance to time and, perhaps more interesting, the peculiar characteristics of its patina. RUTH POCOCK [*Student*]

Greater English Church Screens. Being great roods, screenwork and rood-lofts in cathedral, monastic and collegiate churches in England and Wales, by *Aymer Vallance.* 10¼ in. viii + 184 pp. + pls. Batsford. 1947. £1 10s.

Aymer Vallance, who died in 1943, was an authority on English Church Screens. His former volume on the mediæval screens of Parish Churches—English church screens—is a standard work on the subject.

This new book completed by his literary executor (Edward T. Long) deals with the larger screens in Monastic and Secular Cathedrals and Collegiate Churches including the Oxford and Cambridge College Chapels which with their Organs are fully illustrated and annotated.

The first chapters deal exhaustively with the Rood, Pulpitum and Rood Screen, showing much research with intensely interesting results, though it is somewhat remarkable that two mediæval examples of the carved figure of Christ that remain at Cartmel Fell and in The Welsh National Museum at Cardiff are not referred to.

The history of the line of processional stones set out in the paving of the Naves of our greater Churches regulating the ceremonial processions moving up to The Great Rood is of more than antiquarian interest.

In these sterile days of Ecclesiastical Architecture it is refreshing to be reminded of the surprising wealth and variety of Gothic screenwork left to us; especially when the only major work now being executed in London—The House of Commons—is following our traditional and indigenous style.

As usual, Messrs. Batsford have produced a beautiful volume with fresh photographs—on which the book depends—illustrating our heritage of both Gothic and Renaissance Screens in stone, wood and iron.

The jacket reproduces a delightful water-colour of the interior of Salisbury Cathedral by J. M. W. Turner and a charming colour sketch of a stone screen at Norwich Cathedral by J. S. Cotman forms the Frontispiece.

The index should refer to the many drawings and diagrams in the text. The size of the volume allows for well-proportioned margins to the majority of the plates, but it is unfortunate that a larger margin was not possible to the letterpress, for a 6-in. line of the type adopted leaves the eye wandering to pick up the next line of text. The plate number 78 is printed upside down and it seems rather pedantic to refer to Peterborough Cathedral as The Abbey Church and Christ Church as 'Twynham'.

The book with over 150 plates is printed on good paper at a very moderate price.

LESLIE T. MOORE [*F*]

Building in Cob, Pisé, and Stabilized Earth, by *Clough Williams-Ellis,* [*F*], and *John and Elizabeth Eastwick-Field,* [*A*/*A*]. 8½ in. xii + 164 pp. + pls. text illus. Country Life, 1947. 15*s*.

The first edition of 'Building in Cob, Pisé, and Stabilized Earth' was published in 1919. There was then a shortage of one million houses, and building materials were very scarce. 'No coal, no cement . . . raw timber is hardly obtainable, and seasoned timber does not exist.' So wrote St. Loe Strachey in an introduction that might have been written yesterday and not 19 years ago. Today interest in the use of earth as a building material is reviving. This new edition of Clough Williams-Ellis' book appears at a very appropriate time. It has been revised and brought up to date by the Eastwick-Fields. Their approach to the problems of earth building is a scientific one and use has been made of the results of recent building research, especially on natural and artificially stabilized soils. The book is well illustrated by photographs and some very clear and concise line drawings by Mrs. Eastwick-Field.

Earth building is a rural craft, and one of the characteristic features of rural building is its universality both in time and in space. Wherever man tills the soil, the climate is favourable and suitable earths are to be found, there will the craft of building with earth flourish. It is not surprising, therefore, that whenever there is a revival of agriculture and of rural building, interest in building with earth is also revived. This was demonstrated in England at the beginning of the 19th century, when for a number of

reasons there was a revival of things agricultural, and in rural architecture. Generally this took the form of pattern books of 'rustic, peasants' and ornamental cottages,' but a few writers did examine seriously rural building techniques, including pisé-de-terre. Among these were Henry Holland, the architect, and Dr. Abraham Rees, the encyclopaedist, from whose works Clough Williams-Ellis has drawn extensively. Their purpose was to popularize a method of building which seemed, as Peter Nicholson wrote at the time, 'from its cheapness and durability, and the readiness with which it is executed to deserve the attention of the proprietors of lands in this kingdom, as a means of raising comfortable houses for their labourers and cottagers which, from the increased price of the usual sorts of building materials are now becoming seriously expensive to produce.'

Unless we are doomed to return to a subsistence economy, I can see little chance of a large-scale revival of building with earth in this country today. Its principal advantage is that it uses materials already on the site. This means off-site and transport costs are less but site costs are increased. The thicker walls required also mean more expensive roofs and foundations. Our transport system is one of the most developed in the world and there is a serious shortage of rural labour. Because of this and to reduce stoppages due to weather, the trend in building and especially in rural building, has been towards the use of factory-made building elements. There is no indication that it will be reversed. There is, however, a great future for earth building on a scientific basis in those colonial and semi-colonial areas where transport facilities are poor, labour is plentiful and the carcase is still the most important part of a building. Some useful information on earth construction in the Colonies is given in the chapter on 'Some Practices Abroad', but more space could with advantage have been devoted to this, perhaps the most important aspect of the subject. G. ANTHONY ATKINSON [*A*]

The Gateway to South Africa. Description of the Cape Town foreshore plan. La Porte. etc. Die Poort, etc. *South African Railways*, ob. 7¼ in. by 9¾ in. 49 pp. text illus. 1947.
This booklet gives a brief account, in English, French and Afrikaans, of the proposed development of Cape Town, covering 500 acres of land reclaimed when the new Duncan Dock was built. Town planning advisors were Prof. L. W. Thornton White, E. Longstreth Thompson and M. E. Beaudouin.

Housing the Country Worker, by *M. F. Tilley*. 8¾ in. × 5¾ in. 152 pp. Faber. 1947. 12s. 6*d*.
The choice of a subject for the R.I.B.A. Final Thesis must often have been the commencement of specialized research pursued long after the arrival of the Associateship Diploma, and one wonders how many acknowledged experts have in the past found the initial incentive for special study of their particular branch of the profession in this way.

This excellent little book is admittedly the result of this process. It is a collection of second thoughts on a Final Thesis, revised in the light of recent developments, but it is more than an essay in expression.

Appealing for an open mind and a clear vision in remodelling and expanding our lovely villages, it makes its own contribution to current thought on village layout and communal amenities in the countryside —albeit venturing on dangerous ground on the subject of the 'tied cottage' (a contributory factor in the drift to the towns).

Bureaucratic *laisser faire* resulting in sprawling development receives some mild criticism. Maybe M.O.T.C.P. will rectify this in future.

The writer deals constructively with the various Government sponsored house plans, and such questions as reconditioning, sewerage, water supply, electricity, utility rooms (incorporated or attached), bathrooms (up or down), storage space. Perhaps reference might have been made to the Northamptonshire W.I. Competition, but some of the assessor's comments are covered in the text.

Mr. Tilley is evidently a man who knows and loves the countryside, but his arguments for some of the improvements suggested by the Scott Committee show that he is not simply a 'preservationist', and his book can be recommended for the bookshelves of R.D.C. Surveyors and all those people concerned with the repair or replacement of rural property. Architects may occasionally be included in the latter category. BERNARD LOWE [*L*]

Gloucestershire, Somerset and Wiltshire Land Classification, by the *University of Bristol Reconstruction Research Group*. 12¾ in. 40 pp. + map, text maps. Bristol: Arrowsmith. 1947. 12*s*. 6*d*.

Land Classification in the West Midland Region. By the *West Midland Group on Post-War Reconstruction and Planning*. 11¼ in. 48 pp. + 3 maps, text maps. Faber and Faber. 1947.
These two surveys represent much careful research covering a considerable area of Great Britain. Both are well-written and printed. and are plentifully illustrated with maps.

The Gravity Warm Air System. *Ministry of Fuel and Power, for Inter-departmental Committee on Domestic Heating*. (Background heating in small dwelling houses.) 10½ in. × 8¼ in. 12 pp. + sheets in pocket. text illus. H.M.S.O. [1947.] 1*s*. 6*d*.
The purpose of this bulletin is to describe a method by which house heating may be increased and improved with no increase in fuel consumption. In the 'gravity system' heat is made available from the centrally placed chimney flue to maintain a background temperature of 50 degrees throughout the house. Various alternative details are illustrated, together with the Ministry of Works Heat Service Unit; a useful set of information sheets is included.

Notes and Notices

NOTICES

The One Hundred and Tenth Annual General Meeting, Monday 3 May 1948
The One Hundred and Tenth Annual General Meeting will be held on Monday 3 May 1948 at 6 p.m. for the following purposes:

To read the minutes of the Ninth General Meeting held on 6 April 1948; formally to admit new members attending for the first time since their election.

To receive the Annual Report of the Council and Committees for the official year 1947-48.

(Copies of the Annual Report have been sent to members.)

It will facilitate answers to questions if members will give the Secretary prior notice of any questions which they may wish to ask. Notices should be in the Secretary's hands not later than 24 April. This will not preclude the right of members to ask questions on the Annual Report without having given prior notice.

To nominate candidates (two members) for the office of Hon. Auditor for the ensuing year.

To receive the list of attendances at the Council during the Session.

(Light refreshments will be provided before the meeting.)

Session 1947-48. Minutes X
At the Eighth General Meeting of the Session 1947-48 held on Tuesday 9 March 1948 at 6 p.m. Sir Lancelot Keay, K.B.E., President, in the Chair.

The meeting was attended by about 400 members and guests.

The Minutes of the Seventh General Meeting held on 24 February 1948 were taken as read, confirmed and signed as correct.

The following members attending for the first time since their election were formally admitted by the President:

AS FELLOW:

Clarence Bacon.

AS ASSOCIATES:

Mrs. I. L. E. Austin-Smith, David Bush, C. J. Cunningham, W. A. V. James, R. L. Jenkins, D. F. Lebensold, Miss J. S. Lee-Jones, E. T. Petter, L. W. C. Phillips, Miss M. K. W. Reader, G. E. Soulsby, D. P. Taylor, E. F. Tucker.

AS LICENTIATES:

J. A. Bouch, F. B. Camp, H. J. Keat, J. H. Saunders.

Mr. Howard Robertson, M.C., S.A.D.G. [*F*], having read a Paper on 'The American Scene', a discussion ensued, and on the motion of Mr. G. A. Soilleux, Australian Member of the Board of Design for the United Nations Headquarters Planning, seconded by Mr. A. R. F. Anderson [*F*], a vote of thanks was passed to Mr. Howard Robertson by acclamation, and was briefly responded to.

The proceedings closed at 7.30 p.m.

Session 1947-48. Minutes XI
At the Ninth General Meeting of the Session 1947-48 held on Tuesday 6 April 1948 at 6 p.m.

Sir Lancelot Keay, K.B.E., President, in the Chair.

The meeting was attended by about 120 members and guests.

The Minutes of the Eighth General Meeting

held on 9 March 1948 were taken as read, confirmed and signed as correct.

The President made a few brief remarks congratulating Monsieur Auguste Perret (Hon. Corresponding Member, R.I.B.A., France) on the award of the Royal Gold Medal for 1948, and Mr. Howard Robertson, M.C., S.A.D.G. [*F*], translated the President's remarks into French, adding some observations of his own in French and English.

The President then called upon two past Royal Gold Medallists, Sir Percy Thomas, O.B.E. (Past President), and Mr. Edward Maufe, R.A., M.A. [*F*], to escort Monsieur Perret to the platform, and invested him with the Royal Gold Medal for 1948.

Monsieur Perret expressed his thanks to the President and Council for the honour conferred on him, and Mr. Howard Robertson translated Monsieur Perret's remarks into English.

On the invitation of the President, His Excellency the French Ambassador (Monsieur Rene Massigli, K.B.E.) then spoke briefly on the award and congratulated Monsieur Perret.

The proceedings closed at 6.40 p.m.

R.I.B.A. Reception 30 April 1948

There are still a few tickets available for the Reception to be held on Friday 30 April, and members or students wishing to apply should do so at once, sending the necessary remittance. Tickets are 15*s*. each.

Amendments to R.I.B.A. Bye-laws

Notification has now been received from the Privy Council that they have approved the proposed revisions to the Bye-laws which were agreed at the Special General Meetings held on 13 and 27 January 1948. The following are the amendments:

Bye-law 28 (1): Delete sub-paragraphs (*l*) and (*m*) and substitute new paragraph (*l*) as follows:

'Two representatives of the Salaried and Official Architects' Committee being Fellows, Associates or Licentiates of the Royal Institute.'

Bye-law 35: Delete the words 'in May'.

Bye-law 58: Delete 'a Monday in May' and substitute 'a date in May or June'.

R.I.B.A. Kalendar

A new issue of the Kalendar will be published in the autumn of the year. The attention of members and Students is drawn to the note on this subject which appears on page 233.

Composition of Subscriptions for Life Membership

Fellows, Associates and Licentiates of the R.I.B.A. may become life members by compounding their respective annual subscriptions. Full details may be obtained on application to the Secretary, R.I.B.A.

The Reception of New Members at General Meetings

The procedure for the introduction and reception of new members at General Meetings is now as follows: New members will be asked to notify the Secretary beforehand of the date of the General Meeting at which they desire to be introduced, and a printed postcard will be sent to each newly elected member for this purpose. They will be asked to take their seats on arrival in a special row of seats reserved and marked for them. At the beginning of the meeting, on the invitation being given to present themselves for formal admission, each new member will be led up to the Chairman by one supporter, and the Chairman will formally admit him to membership.

Architectural Competitions—Assessors' Awards

All architects who take part in architecural competitions are reminded by the Council of the R.I.B.A. that participation in a competition is a definite acceptance of the principle that the award of the assessor is final and binding upon themselves as well as upon the promoters, and that any competitor who feels that he has real ground for dissatisfaction with an assessor's award should communicate with the Secretary of the R.I.B.A.

Moreover, all architects, whether competitors or otherwise, are reminded that discussion or correspondence in the public or professional Press which tends to criticism or disparagement of an assessor or award cannot alter the final and binding effect of the award, but may prejudice architects and the whole competition system in the opinion of the public, and is therefore, highly undesirable.

Correspondence with the Institute

In order to facilitate speedier attention to correspondence, and to relieve the staff of a great deal of research, it is particularly requested that members and students will kindly state in all correspondence with the Institute the class of membership (F, A, L or Student) to which they belong.

New Building Materials and Preparations

The attention of members is drawn to the fact that information in the records of the Building Research Station, Garston, Watford, Herts, is freely available to any member of the architectural profession, and architects would be well advised when considering the use of new materials and preparations of which they have had no previous experience, to apply to the Director for any information he can impart regarding their properties and application.

Members serving with the Forces. Decorations and Distinctions

Woodman, Dudley F. [*Student*], Capt., R.E. Awarded King Haakon VII Liberty Medal.

BOARD OF ARCHITECTURAL EDUCATION

Bernard Webb Studentship

The Bernard Webb Studentship for the historical and critical study of architecture, which is open to members of the Architectural Association and tenable under the auspices of the British School at Rome, has been awarded to Mr. Hilton Wright [*A*] for work on Roman housing in Central Italy.

The Tite Prize and Victory Scholarship Competitions, 1948

The attention of intending competitors is called to the fact that the closing date for the submission of forms of application for the Tite Prize is the 7 May 1948.

The Tite Prize, a certificate and the sum of £100, is confined to *Probationers* and *elected Students* of the R.I.B.A., and elected Students of Dominion Allied Societies who have passed the R.I.B.A. Intermediate or equivalent examination, or produce certificates from responsible architects to the effect that they have reached the required standard. Students who have passed the R.I.B.A. Final or equivalent examination or who will have passed the R.I.B.A. Final or equivalent examination at the time of the en loge competition are not eligible to compete.

Under the new arrangements for the competition only one en loge competition will be held. This will take place in London and at non-Metropolitan centres on Monday 12 July 1948.

The Victory Scholarship and the sum of £120 is confined to members of the R.I.B.A. and of the Allied Societies Overseas and elected Students of the R.I.B.A. and of the Allied Societies Overseas, who have passed the R.I.B.A. Final or equivalent examination or who have produced certificates from responsible architects to the effect that they have reached the required standard.

The en loge competition for the Victory Scholarship will be held on the same day as that for the Tite Prize, i.e., Monday 12 July 1948. The closing date for the submission of forms of application is 17 May 1948. Forms of application for admission to the competitions may be obtained at the R.I.B.A., 66, Portland Place, London, W.1.

R.I.B.A. Town Planning Diploma

Mr. Alan Derek Knapton [*A*] having passed the qualifying examination, has been awarded the R.I.B.A. Diploma in Town Planning.

COMPETITIONS

New Memorial Building at Great Russell Street, W.C.1, for the T.U.C.

The General Council of the Trades Union Congress invite architects of British nationality, or architects resident in this country, to submit designs in competition for the T.U.C. Memorial Building, which they propose to erect on a site in Great Russell Street, London.

Assessor: Sir Percy Thomas, O.B.E., Hon. LL.D., P.P.R.I.B.A.

Premiums: £2,000, £1,000 and £500.

Last day for submitting designs: 30 June 1948.

Conditions may be obtained on application to the General Secretary, Trades Union Congress, Smith Square, London, S.W.1.

Deposit: £2 2*s*.

International Town Planning Competition

Stockholm's Town Planning Board invites experts of all countries to take part in a competition in connection with a new main artery between the districts of Södermalm and Östermalm (Norra Djurgården) via Södra Djurgården.

Assessors:

The commissioner for the town planning department, Helge Berglund, chairman.
Professor Sir Patrick Abercrombie [*F*].
Hakon Ahlberg, architect.
Anders Ahlén, civil engineer.
David Anger, civil engineer.
Professor Anker Engelund.
The commissioner for the harbour department, Harald Göransson.
Hans von Heland, assistant city treasurer.
Sven Markelius, city planning director.
Ernst Sundström, civil engineer.
Gunnar Wetterling, city architect.

Premiums:

The jury have at their disposal the sum of 60,000 Swedish crowns. Of this, 48,000 crowns shall be awarded in prizes, and 12,000 crowns used for purchasing proposals. Four prizes shall be awarded. Unless a unanimous jury decide to the contrary, the first prize shall be 20,000 crowns.

The lowest prize shall not be less than 6,000 crowns, nor the lowest purchasing price less than 3,500 crowns. Winning entries, or proposals purchased, become the property of Stockholm City without further compensation.

Last day for submitting designs: 1 April 1949.

Conditions may be obtained from Tävlingsfunktionären, Stockholms stads stadsplanekontor, Stadshuset, Stockholm.

Deposit: 100 Swedish crowns.

ALLIED SOCIETIES

Changes of Officers and Addresses

South Wales Institute of Architects. Chairman, Mr. Lionel W. D. Wall [*A*], Metropolitan Bank Chambers, Commercial Street, Newport, Mon.

Essex, Cambridgeshire and Hertfordshire Society of Architects, West Essex Chapter. Chairman, Mr. Robert O. Foster, Midland Bank Chambers, Buckhurst Hill, Essex.
The South Wales Institute of Architects, Western Branch. Honorary Secretary, Mr. C. G. Tagholm [*A*].

York and East Yorkshire Architectural Society Annual Dinner
The York and East Yorkshire Architectural Society held their Annual Dinner and Dance at the Royal Station Hotel, York, on Friday 2 April 1948, when over a hundred members and guests assembled. The Company were received by the President of the Society, Mr. Andrew Rankine, O.B.E. [*A*], and the President of the R.I.B.A., Sir Lancelot H. Keay, K.B.E. After partaking of an excellent meal, the toast of the Royal Institute of British Architects was very ably proposed by Mr. Rankine, and an interesting response given by Sir Lancelot Keay. Reference was made to the important position of the architect in the every-day life of the community as his work very largely influenced the future environment of the people. Principal J. H. Nicholson, M.A., of University College, Hull, proposed the City and County of York, and referred to the delightful architecture of the City and the historical legacy which had been handed down through the ages.

Replying, the Rt. Hon. The Lord Mayor, Alderman Wm. Dobbie, C.B.E., M.P., said the best, most active and fertile brains must be given full opportunity in the architectural development of the future, and also expressed appreciation of the voluntary help given by the York Advisory Panel of Architects in assisting the Corporation on the Control of Elevations. He also commented on the good work which resulted from the co-operation of private architects and Local Authorities, instanced by the admirable scheme recently produced for the replanning of the central area of York.

The toast of 'Our Guests' was aptly and entertainly proposed by Mr. A. Newton Thorpe [*F*], Senior Vice-President of the Society, and briefly responded to by Mr. Norval Paxton, M.C. [*F*], President of the West Yorkshire Society of Architects.

Other guests included the Lady Mayoress, The Sheriff, Alderman C. F. Sanderson, Chancellor F. Harrison, Mr. C. D. Spragg (Secretary, R.I.B.A.), Mr. C. J. Minter, City Engineer, and Mrs. Minter, Principal Hemming of the Hull College of Art and Mrs. Hemming, Mr. R. T. Cotterill, Principal of the York School of Art, and Mrs. Cotterill, Mr. Dodsworth, President of the York Master Builders' Association.

The Royal Incorporation of Architects in Scotland
The Annual Convention takes place in Aberdeen on 4 and 5 June. Further particulars later.

Taunton Group of the Bristol Society of Architects
A well-attended meeting of the Taunton Group of the Bristol Society of Architects was held at the Castle Hotel, Taunton, on Tuesday 16 March. Mr. Eric C. Francis, F.S.A., R.W.A. [*F*], Chairman of the Group presided and Mr. C. D. Spragg, Secretary, R.I.B.A., gave a talk on 'The Activities of the R.I.B.A.' and afterwards dealt with questions put to him by members.

A cordial vote of thanks to Mr. Spragg was passed on the proposition of Mr. H. S. W. Stone [*F*], seconded by Mr. R. H. Clay [*A*], Hon. Secretary of the Group.

GENERAL NOTES

The Hospital Service Plan
Members of the Royal Institute of British Architects may like to know something about the 'Hospital Service Plan', and how they may benefit by joining. The object of the Plan is to enable provision to be made towards the expenses of illness or accident necessitating surgical or medical in-patient treatment in a hospital or nursing home. The subscription rates are very reasonable, and in return, subscribers and their dependants receive substantial cash payments against the charges for in-patient treatment in any hospital private ward or recognized nursing home, wherever situated, including surgeon's, physician's, and other professional fees. There are no income limits; anyone may join under sixty years of age, and may then remain a member for life. The Plan is a non-profit making organization, and its solvency is fully guaranteed by King Edward's Hospital Fund for London, who are also its sponsors.

The London Association for Hospital Services invites members of the Royal Institute of British Architects to join the Hospital Service Plan, wherever they reside. Many people desire private accommodation and services in hospitals and nursing homes, and as these amenities will still be available after the nationalization of hospitals, the Plan will continue to render a valuable service to its subscribers. A booklet giving full particulars may be obtained from The Secretary, The London Association for Hospital Services Ltd., 10 Old Jewry, London, E.C.2.

Obituaries

Llewellyn Kitchen [*F*], senior partner in the firm of Gelder and Kitchen, of Hull, some time member of the R.I.B.A. Council and a Past-President of the York and East Yorkshire Architectural Society, died on 14 February 1948 in his 79th year. Mr. F. J. Horth [*F*], of Hull, has sent the following appreciation :

'All Saints Church, Hull, was full even to overflowing, the streets surrounding the church were also lined with motor cars. One had to queue for a seat; all to pay a last tribute of respect to Llewellyn Kitchen. He was a little, jolly and generous man, and always ready to help. I can hear him now, at a meeting of the York and East Yorkshire Society of Architects, after condemnation had been freely given by the majority, to the conduct of a fellow member, saying very quietly, "Well, you know architects have got to live, and probably the gentleman was sorely tempted, and had a family to keep".

'Another occasion when we were arranging prizes for the junior members, he promised, and gave, ten guineas each year to be awarded at the discretion of the Council.

'He also possessed one gift, somewhat rare amongst architects; he was an early riser. If one had had a restless night, and got up earlier than usual, the chances were that one would see Llewellyn Kitchen, walking briskly to his office, and "Did he work late?", there often was a light in his office window considerably after the usual leaving time.

'The last time we met, only a few weeks ago, he looked as brisk as ever, with his short quick step and dapper appearance. The people of Hull do not usually make a practice of crowding churches, but when a man whom everyone respected, and liked, passes on, the urge to pay their last tribute is irresistible. Kitchen is a loss to Hull, and to all his friends. He was a hard worker, a hard player, and a very gracious man.'

Mr. Kitchen's architectural accomplishments are disseminated throughout the East Riding of the county of broad acres as well as in other parts of the country;—Methodist Mission Halls in Hull, shop premises (Hammonds, Ltd., Thornton-Varley, Ltd., Edwin Davis and Co., Ltd.), hotel premises (the York, the Crown Inn, the Priory Inn), and the Sutton Hospital Annexe at Sutton-on-Hull, a branch of the Hull Royal Infirmary, testify to Mr. Kitchen's diversity in architectural design.

The surviving partners of the firm, Mr. H. Conyers Robinson [*L*] and Mr. John P. Taylor [*A*] will continue the practice under the present style of Gelder and Kitchen.

Robert Ian Stewart [*A*]. We regret to record the death on 7 November 1947 of this member at the early age of 44. Mr. Reg de Smidt [*A*], of Cape Town, has sent the following notes concerning Mr. Stewart's career and work:

'Robert Ian Stewart was one of the original group of students formed by the late H. J. Brownlee, afterwards to become the nucleus of the architectural school of the University of Cape Town; he paid a short visit to Great Britain in 1925, where he worked for some months in Edinburgh.

'The bulk of his architectural career was, however, devoted to work in his home town, Cape Town, where he was for many years with the firm of W. H. Grant, by whom he was later admitted into partnership. Mr. Stewart was chiefly interested in theatre work, in office blocks, and in the remodelling of existing structures, and was associated with his firm in the design of many of the larger cinemas, office and commercial buildings, and also of important flats and hotel projects in Cape Town and its precincts.'

Alfred H. Richardson [*L*], of Worksop, Notts, died on 6 November 1947, aged 77. He retired from active practice at the beginning of the late war owing to war conditions and the call-up of his assistants.

Mr. Richardson's practice when in full force during the inter-war years saw the development by him of several housing estates in North and South Worksop and surrounding districts of Nottinghamshire, and after the 1918 war he designed a local authority housing estate. From 1924 he was a district valuer for the Halifax Building Society.

The development of the present Worksop Hospital from a very small cottage hospital to its present size, the Worksop 1914-18 War Memorial, the Church of England Schools and Memorial Hall at Blyth, the first gas offices and water works for the Worksop local authority, and many hotels and bank alterations in and around the town are the work of Mr. Richardson.

Sir A. Brumwell Thomas [*F*], who was in private practice in London, died on 22 January 1948 at the age of 79. His principal works were the Belfast City Hall, the Town Halls of Stockport, Woolwich, Clacton and the Skefco Ball Bearing Works at Luton; he also designed the war memorials at Dunkerque and Belfast. He was created a Knight in 1906.

Mr. J. G. Gamble [Ret. *F*] has sent the following appreciation:

'It was with feelings of sorrow that I learned of the death of my friend and colleague Sir Brumwell Thomas, and by his death has broken a friendship which has lasted for the past 50 years.

'I first met him in Belfast in December1897 when he was on a visit there to arrange for the commencement of the work of erection of the Belfast City Hall. 'Mr.' Thomas (as he then was) was about 29 years old and I was a few years

his senior. Later that day, before he left Belfast, he handed me a large roll of drawings of the new building, which was to be started on 1 January 1898. The work occupied about eight years and seven months and during all that time we had the most cordial relations, he visiting Belfast about every two months.

'When the building was completed in 1906, it was opened by Lord Aberdeen, after which we were all informed that King Edward VII had conferred a Knighthood on the architect.

'Sir Brumwell Thomas paid frequent visits to Belfast afterwards and his invariable practice was to call upon me right up to his retirement in 1938 at my office of Chief Architect in the City Surveyor's Department. Since that time I have had communication with him until 1946. He remained a bachelor.'

Arthur E. T. Mort [*F*]. The death at the age of 47 of Arthur E. T. Mort, of Winchester, has robbed Hampshire of one who not only held a high place in his profession but was also a genial personality in the field of sport.

He had been under medical care for a considerable period, and seven weeks prior to his death was admitted to a nursing home, where he died on 6 January 1948. He leaves a widow and schoolgirl daughter.

In his youth, Mr. Mort played for Winchester City F.C., and he was equally well known as a forceful bat at cricket and a lawn tennis player of more than average skill. He was a pioneer motor-cyclist, and a member of the original Winchester Motor-Cycling Club.

Professionally, he will be remembered for his layout of the new 100-cottage adjunct to the Enham-Alamein village for disabled ex-Service men and their families, which was officially opened by Princess Royal only six months ago. His inspired employment of materials and the skill with which he fitted buildings into their environment were evidenced in the thatched cottages he planned for Lord Portal at Freefolk.

During the late war Mr. Mort was a staff major in the R.E., Southern Command. In Freemasonry he had been a member of the William of Wykeham Lodge for many years.

Mr. Ernest Edward Kemeys-Jenkin [*F*], of Exmouth, died on 22 November at the age of 64. He was a Devon County Councillor, a former President of the Devon and Cornwall Architectural Society and at one time represented that Society on the Council of the Royal Institute. He was also a Member of the Voluntary Panel of Architects for Devon, set up before the war to advise local authorities on design and lay-out of buildings.

A County J.P., Mr. Kemeys-Jenkin took a keen interest in the civic life of Exmouth, where he was President of several large organizations, also serving on the Boards of Governors of the University College of the South-West; Blundell's School, Tiverton; the Maynard School, Exeter; and Exmouth Grammar School, and a member of the Exeter and District Court of Referees under the Ministry of Labour.

His practice was a varied one, including much work in connection with banks, hotels and licensed premises.

Henry Budgen [*F*]. The death was announced on 25 February of the senior partner in the firm of Henry Budgen and Co., of Cardiff. Mr. Budgen was unable to hold any official position throughout his life owing to total deafness since he was a young man. Trained in London and later with Messrs. Kempson and Fowler, Diocesan architects of Llandaff, he was elected an Associate in 1892 and a Fellow in 1900. In 1893 he became a junior partner in the firm of J. P. Jones and Sydenham Richards and later practised on his own account. His sons, Mr. E. R. Budgen, A.R.I.C.S., and Mr. P. G. Budgen [*A*], joined his practice in 1919 and 1934 respectively and will carry on the firm at 95-97, St. Mary Street, Cardiff.

His principal architectural works when with Messrs. Jones and Richards were the Western Mail Buildings, Cardiff, the Royal Hotel, Queen's Hotel, Messrs. James Howell and Co., the Y.M.C.A. and the Cory Hall. When practising on his own account Mr. Budgen designed the Cambrian Buildings, Cymric Buildings, Merthyr House, Aberdare House, and the Midland Bank Chambers, all at the Cardiff Docks, and many Wesleyan Methodist Chapels in Wales, prominent amongst them being Trinity Church and Albert Road Church, Penarth and the Albany Road Methodist Church, Cardiff. In partnership with his sons, Mr. Budgen was responsible for the Dominions House, Graham Buildings, Westminster House, G.E.C. Buildings, and the Royal London House, all at Cardiff. He was aged 81 at the date of his death.

Review of Films—2

The country of origin and date of release are given first. The film is in monochrome unless otherwise stated. The sizes (35 *mm. and* 16 *mm.*) *are given. Sound films are marked 'sd.', and silent 'st.' The running time is given in minutes.*
(F) indicates free distribution.
(H) indicates that a hiring fee is payable.

Building a House
Britain 1948 (*H*) Teaching notes available.
Summary. This film outlines briefly and elementarily the different operations which take place when a house is built. The first shots show the plans prepared by the architect, and the work of building is then shown as a sequence of the various site trades, bricklayer, carpenter, plumber, plasterer, etc., to the final preparation for occupation.
Appraisal. An excellent teaching film for the age group for which it was designed (11-15), though it could probably be seen with profit by older children. The film has been well thought out and the photography is good. A sufficient idea of the various building trades is given without going into too much detail, though in one or two of the sequences the film has been cut just before the completion of a particular job which is a little irritating. The film presupposes the presence of a commentator who can answer questions after the film has been shown.
16 st. 11 minutes. May be hired from British Instructional Films, Mill Green Road, Mitcham, Surrey.

Dover, Spring, 1947
Britain, 1947. (*F*)
Summary. Opening shots show damage which Dover sustained during the war and the lack of adequate housing accommodation for its citizens. In June 1947 planning specialists were called in and a vigorous housing programme instituted in addition to the repair work which was already under way. Prefabricated houses are shown erected on sites to be used subsequently for permanent dwellings.
Appraisal. A competent and workmanlike record of the reconstruction work carried out by a local authority. It also has value from the long-term planning point of view. The presentation and commentary are lively and the photography on the whole good.
16 sd. 11 minutes. May be hired from the Central Film Library, Imperial Institute, South Kensington, S.W.7. (Reference No. U.K. 271.)

Street Prospect
Britain, 1947. (*F*)
Summary. In this film an attempt has been made to illustrate certain methods of landscape treatment in residential areas. Such points as regard for existing natural features and contours, use and misuse of road trees, open spaces as the landscape setting for residential units—are introduced. The film illustrates the different techniques and policies which have been adopted at Bournville during the past 50 years.
Appraisal. The sponsors of this film state that it is unambitious in character and is only intended to suggest certain elementary ways of laying out and landscaping an estate. Within this narrow field the film may be said to fulfil its object though in places the photography is amateurish and there is a lack of continuity. Though somewhat long the film would be of interest to general audiences and to those responsible for the layout of housing estates and unacquainted with the possibilities of landscape treatment.
16 st. 11 minutes. May be hired from Bournville Village Trust, Estate Office, Bournville, Birmingham 30.

Notes from the Minutes of the Council

MEETING HELD 9 MARCH 1948

Appointments

(A) R.I.B.A. Representatives on Organizing Committee for International Conference on Sound Transmission to be held from 14-16 July 1948: Mr. Hope Bagenal [*F*] and Mr. William Allen [*A*].

(B) R.I.B.A. Representative on British National Committee for the Second International Conference on Underground Town Planning and Construction at Rotterdam in June 1948: Mr. W. F. B. Lovett [*F*].

(C) R.I.B.A. Representative on Registration Board of the National Register of Electrical Installation Contractors: Mr. G. Fairweather [*F*] (re-appointed).

(D) Codes of Practice Committee on Street Lighting convened jointly by B.S.I. and Institution of Electrical Engineers: R.I.B.A. Representative: Mr. G. Fairweather [*F*].

(E) B.S.I. Drafting Committee on Auditorium and Safety Lighting in Cinemas: R.I.B.A. Representative: Mr. Alister MacDonald [*F*].

(F) B.S.I. Committees: B/64—Kitchen Furniture, TIB/5—Use of Timber in Building Construction, TIB/6—Joinery: additional R.I.B.A. representative, Mr. David Booth [*F*].

(G) Architects Registration Council of the United Kingdom: Mr. S. W. Milburn [*F*] in place of Mr. T. Cecil Howitt [*F*].

Alteration of Date of July Council Meeting: The Council have approved the alteration of the date of the July Council Meeting from Tuesday 6 July to Wednesday 7 July 1948.

Direct Election to the Fellowship: The following were elected to the Fellowship under the provisions of the Supplemental Charter of 1925, Section IV, Clause 4: Mr. W. A. Macdonald, Assistant Chief Government Architect and Past President of the Transvaal Provincial Institute; Mr. D. L. Nurcombe, lately Senior Vice-President of the Transvaal Provincial Institute; Mr. H. L. Roberts, Past President of the Cape Provincial Institute.

1951 Exhibition: The Secretary reported that preliminary conversations had taken place between the Institute and the Ministry of Town and Country Planning in regard to the 1951 Exhibition. The Ministry had decided to recommend that there should be a separate organization devoted to Architecture, Town Planning and Building Research. An Advisory Council was being set up, and the R.I.B.A. were asked to appoint an architect representative.

The Council have appointed Mr. H. V. Lobb [*F*] Chairman of the R.I.B.A. Exhibition Sub-Committee.

Mr. James Shearer, R.S.A. [*F*]: The Secretary was instructed to convey the congratulations of the Council to Mr. James Shearer [*F*] on his election as an Academician of the Royal Scottish Academy.

Membership: The following members were elected: as Honorary Fellows, 2; as Honorary Associates, 4; as Fellows, 16; as Associates, 50; as Licentiates 34. *Students:* 56 Probationers were elected as Students.

Applications for Election: Applications for election were approved as follows: *Election* 4 *May* 1948: as Fellows, 11; as Associates, 125; as Licentiates, 12.

Applications for Reinstatement: The following applications were approved: as Fellow: Hubert William Horsley; as Associates: John Bernard Mendham and Robert Primrose Morris; as Licentiates: Leonard Francis Cavanagh and Alfred Albert Ospalak.

Resignations: The following resignations were accepted with regret: Harry Bryant Newbold [*F*], Miss Elizabeth S. Aglen [*A*], Gilbert Thomas Bassett [*A*], Higford Singer Griffiths [*A*], William Dymoke White [*L*].

Applications for Transfer to Retired Members' Class under Bye-law 15: The following applications were approved: As Retired Fellow: Hubert William Horsley; as Retired Licentiate: Joseph Aldridge.

Obituary: The Secretary reported with regret the death of the following members: Henry Budgen [*F*]. Bernard John Dicksee [*F*]. Mr. Dicksee was a former member of the Science Standing Committee and London Building Acts Committee, and a former Honorary Examiner. Victor Daniel Horsburgh [*F*]. Mr. Horsburgh was Institute Medallist (Essays) 1907. He acted as Honorary Secretary of the R.I.B.A. in Canada from 1925 to 1935, and had also served for many years as an Overseas Examiner. Llewellyn Kitchen [*F*] Mr. Kitchen was a former President of the York and East Yorkshire Architectural Society and had represented that body on the Council and the Allied Societies' Conference. Sir Alfred Brumwell Thomas [*F*]. Sir Brumwell Thomas was a former member of the Council and had also served on the Architectural School in Italy Committee, Literature Standing Committee, Board of Architectural Education, Competitions Committee, Town Planning Committee, Joint Premises Committee and Official Architecture Committee. Oswald Arthur Bridges [*Retd. F*]. Alec Lowe Macmillan [*A*]. George Bell [*L*]. Alfred Hubert Richardson [*L*]. William F. William [Student].

Membership Lists

ELECTION: 9 MARCH 1948

The following candidates for membership were elected on 9 March 1948:

AS HON. FELLOWS (2)

Macmillan: The Right Hon. Lord, G.C.V.O., LL.D.
Wavell: Field-Marshal (Archibald Percival) Earl, P.C., G.C.B., G.C.S.I., G.C.I.E., C.M.G., M.C.

AS HON. ASSOCIATES (4)

Keir: Sir David Lindsay, M.A.(Oxon), Hon. LL.D. (Glasgow and Dublin), Belfast.
Moore: Henry Spencer, Hon. D.Litt.
Norman: Ronald Collet.
Rushbury: Henry, R.A., R.W.S., R.E.

AS FELLOWS (13)

Broadbent: Francis George [*A* 1938].
Draffin: Malcolm Keith, M.C., M.T.P.I., N.Z. [*A* 1920], Auckland, N.Z.
Henniker: Richard Frederick, M.A. (Cantab) [*A* 1934].
Hewlett: Reginald Maurice [*A* 1937], Taunton.
Li: Hin Lung, B.Arch. (L'pool) [*A* 1937], Hong Kong.
McWilliams: Herbert Hastings [*A* 1931], Port Elizabeth, South Africa.
Napper: Jack Hollingworth, M.A., A.M.T.P.I. [*A* 1936], Newcastle-upon-Tyne.
Pilley: Amnon Vivian [*A* 1932].
Powell: John Ardern, M.A., A.A.Dip. [*A* 1936], Torquay.
Toy: Clement George [*A* 1935], Taunton.
Watson: William Irving [*A* 1932], Lusaka, Northern Rhodesia.
Young: Alan Rutherford [*A* 1933], Birmingham.
And the following Licentiate who has passed the qualifying Examination:
Richardson: Robert Henry Willoby.

AS ASSOCIATES (50)

Biddulph: Dennis Sydney Golden, Church Stretton, Shropshire.
Bird: Thomas Arthur, D.S.O., M.C.
Burgoine: Peter Frederick, Coventry.
Burrows: Walter Frederick.
Chowdhari: Dattatraya Raghunath, Bombay, India.
Clarke: Arthur Derek.
Conway: Leslie John.
Darnell: Fitzherbert.
Duncan: Margaret Elizabeth Lois Susan (Mrs.).
Ede: Ernest Darrell.
Eeles: Clive Thomas, Sydney, New South Wales.
Everett: Alan George.
Feledy: Francis Eugene, Sydney, New South Wales.
Fury: Ronald William.
Gabriel: Elisabeth (Miss), A.A.Dip.
Gamble: Allan Allman, Sydney, New South Wales.
Graham: John Netherby, A.A.(Hons.)Dip.
Grieb: Kenneth William.
Grinling: Robert Sidney.
Hall: John Beresford, Belmore, New South Wales.
Hardy: Alan Walter, Mansfield.
Hay: Mary Clemens (Miss), B.Arch., Auckland, N.Z.
Hayhoe: Harold Robert.
Hershberg: Harry, Melbourne, Australia.
Hill: Richard Towning, A.A.Dip.
Hope: Roy Thomas, Edinburgh.
Irving: Mary Ninanne (Miss), Southport.
Kallmann: Gerhard Michael, A.A.Dip.
Laird: Matthew Stevenson, M.B.E., Edinburgh.
Leahy: Raymond Stuart, Cork.
Lindsay: Ian Francis, Melbourne, Australia.
Luck: Leonard Ernest.
Martin: Lewis Edouard.
Meller: Josef, Dip.Arch.
Mellinger: Lucas Emmanuel Mathias.
Murphy: Joseph William.
Orchard: Louis Neil, D.F.C., Christchurch, N.Z.
Pallister: Lionel Keith, Newcastle-upon-Tyne.
Pocock: Jean (Miss).
Prasad: Shivnath, Dip.Arch. (Edin.), Dip.T.P. (Edin.), Edinburgh.
Price: Rosemary Ann (Mrs.).
Reid: Kenneth Cato.
Richards: David Haydn, Rhymney, Mon.
Roake: John.
Rudder: Hubert Alfred, Haberfield, New South Wales.
Siew: Michael, B.Arch.(Rand), Johannesburg, South Africa.
Tallet: Margaret Pauline (Miss).
Thorp: Graham Marriot, Sydney, New South Wales.
Vincent: James Leonard Schofield, Liverpool.
Wisdom: David Norman.

AS LICENTIATES (34)

Akerman: Reginald Ernest.
Allan: John Duncan, Glasgow.
Bisping: Charles William.
Briggs: Ella (Mrs.).
Dalling: Jack Ernest.
Dickin: Albert William, Bristol.
Engle, Bernard.
Harris: Cecil John.
Heffer: William Walter.
Hoenig: Edgar.
Knighton: Arthur Lionel, Leeds.
Kurz: Alexander, Winchester.
Langtry-Langton: John Henry (Capt.' R.E.), Bradford.
Macfarlane: Alexander Archibald, Glasgow.
McIntosh: Andrew Norman.
Neville: John Thomas Burdett, Northampton.
Penman: John, Perth.
Pollard: William Ernst Ludwig, Leeds.
Reagle: Edmund.
Redman: Edgar, Lancaster.
Rosenberg: Eugene.
Scratchley: Stanley George, M.C.
Shipway: Alan Charles Tocknell.
Smeed: Charles Alfred.
Southcombe: John Richard.
Spooner: Horace Alexander Fraser.
Sternfeldt: Sven Michael.
Stonehill: Maurice Moshe Hareven.
Todd: Herbert Francis.
Tranter: Charles William (Major).
Widdows: Wystan, Ipswich.
Willey: Thomas Roland, Newcastle-on-Tyne.
Wood: Stanley Benjamin.
Wright: Dennett Eric, O.B.E.

ELECTION: 4 MAY 1948

An election of candidates for membership will take place on 4 May 1948. The names and addresses of the candidates, with the names of their proposers, found by the Council to be eligible and qualified in accordance with the Charter and Bye-laws, are herewith published for the information of members. Notice of any objection or any other communication respecting them must be sent to the Secretary, R.I.B.A., not later than Saturday 1 May 1948.

The names following the applicant's address are those of his proposers.

AS FELLOWS (11)

Alp: William [*A* 1947], The Royal Borough of Kensington, Town Hall, Kensington, W.8; 118 Perry Vale, Forest Hill, S.E.23. N. L. Reece, E. H. Paisley, Edwin Williams.

Cheriton: William George Lloyd, O.B.E. [*A* 1919], Ministry of Works, Onslow Gardens, S.W.7; 7 The Harrage, Romsey, Hants. Charles Whitby, P. M. Andrews, O. P. Milne.

Day: Eric Aubrey [*A* 1933], Messrs. Clifford Tee and Gale, Moorgate Hall, E.C.2; 'Firsdown', Greenway, Totteridge, Herts. E. L. Gale, R. G. Cox, W. L. Clarke.

Douglas Jones: Aldwyn, Dip.Arch. (L'pool) [*A* 1933], The Birmingham School of Architecture; Hyde Cottage, Great Saling, near Braintree, Essex. Francis Jones, Prof. R. A. Cordingley, Frederick Gibberd.

Gardner: Harold Stanley [*A* 1934], Assistant Borough Architect, Borough of Twickenham, York House, Twickenham, Middx.; 'Ivy Cottage,' Easthampstead Road, Bracknell, Berks. A. J. Sharp, E. S. Smith, A. C. Townsend.

Grummant: Reginald Thomas [*A* 1921], County Architect's Dept., Middlesex County Council, 20 Vauxhall Bridge Road, S.W.1; 120 Station Road, New Barnet, Herts. H. W. Burchett, C. G. Stillman, C. D. Andrews.

Ixer: Eric Arthur William [*A* 1936], Deputy City Architect, City Architect's Dept., Seymour Road, Plymouth; 5 Anderson Gardens, Higher St. Budeaux, Plymouth. W. G. Davies, E. U. Channon, J. L. Fouracre.

McKee: James Alexander Roy, A.M.T.P.I. [*A* 1940], c/o Jackson A. Blakely, Esq., Architect and Surveyor, Belfast; 58a Kings Road, Knock, Belfast. R. H. Gibson, R. S. Wilshere, T. R. Eagar.

Roth: Stanley Henry James, J.P. [*A* 1930], 32 Little London, Chichester; Warren Lane, Summersdale, Chichester. C. G. Stillman, L. H. Bucknell, A. R. F. Anderson.

and the following Licentiates who are qualified under Section IV, Clause 4 (*c*) (ii) of the Supplemental Charter of 1925:—

Freeborn: John Howard Richard, 30 Fitzroy Square, W.1; Little Chalfont, Amersham, Bucks. H. S. Rogers, B. P. Haigh, G. H. Lovegrove.

Wollenberg: Adolf, 77 South Audley Street, W.1. Howard Robertson, Major Arthur Ash, G. G. Wornum.

AS ASSOCIATES (125)

The name of a school, or schools, after a candidate's name indicates the passing of a recognized course.

Adams: Bernard Charles [Special Final], 14 Clarence Parade, Southsea, Portsmouth. A. J. Sharp, A. C. Townsend, V. G. Cogswell.

Adams: Catherine Campbell-Taylor (Mrs.) (Arch. Assoc. (London): Sch. of Arch.), 12 Neville Terrace, South Kensington, S.W.7. Frederick Gibberd, Howard Robertson, A. R. F. Anderson.

Alford: Frederick Charles [Special Final], The Carlton Guest House, 190 High Street, Redcar, Yorks. Applying for nomination by the Council under Bye-law 3 (*d*).

Anderton: Peter Douglas [Final], 28 Trenton Avenue, Anlaby Road, Hull. G. D. Harbron, Allanson Hick, W. B. Wheatley.

Armitage: Edward John, M.A.(Cantab.) (Edin Coll. of Art: Sch. of Arch.), Strand on the Green House, W.4. J. Macgregor, A. H. Mottram, James Shearer.

Barefoot: Peter Thomas (Arch. Assoc. (London): Sch. of Arch.), 26 Tregunter Road, S.W.10. G. A. Jellicoe, Frederick Gibberd, Richard Sheppard.

Barns: Kenneth William [Special Final], 21 St. Peter's Avenue, Whipps Cross, E.17. W. A. Rutter, Sir Charles Mole, Prof. Basil Ward.

Batho: Lawrence Walter [Special Final], 79 Penrose Avenue Oxhey, Herts. Herbert Kenchington, C. W. Box, P. Hickey.

Bell: Donald Whatmore [Final], 12 Belmont Church Road, Knock, Belfast, N. Ireland. T. R. Eagar, R. H. Gibson, Frank McArdle.

Birch: James Stanley [Special Final], 'Fairview', 17 Houndean Rise, Lewes, Sussex. C. J. Tomkins, E. A. Verger, K. E. Black.

Bowden: Cyril [Special Final], 37 Christleton Avenue, Heaton Chapel, Stockport. H. T. Seward, W. C. Young, Isaac Taylor.

Boxall: Reginald Arthur [Special Final], 10 Hope Street, Salford 7, Lancs. L. C. Howitt, F. M. Reynolds, H. H. Smith.

Brandreth: George Anthony Wilson [Final], 41 Russell Square, W.C.1. C. L. Gill, C. H. James, Prof. H. O. Corfiato.

Brown: Albert Eric [*L*] [Special Final], 'Clinton', 24 Grange Drive, Blaby, Leicestershire. E. W. Roberts, E. Frear, George Checkley.

Browning: Robert Charles William [Final], 'Chiddingstone', Bexley Road, Eltham, S.E.9. E. D. Mills, J. K. Hicks, E. C. Scherrer.

Burbidge: Kenneth Donald [Special Final], 6 Hare Lane, Claygate, Surrey. T. E. Scott, Sir Thomas Bennett, M. L. Winslade.

Carter: John Barrie [Final], 19 Elsworthy Road, N.W.3. Louis de Soissons, C. H. James, E. B. O'Rorke.

Cathels: David (Edin. Coll. of Art: Sch. of Arch.), 38 Lomond Road, Edinburgh, 5. Leslie Grahame-Thomson, J. R. McKay, T. F. Maclennan.

Churchill: William Oliver (Arch. Assoc. (London): Sch. of Arch.), 3 Park Terrace, Cambridge. Peter Bicknell, H. C. Hughes, A. R. F. Anderson.

Claridge: Bryan [Special Final], 12 Derwent Court, Cecile Park, N.8. Thos. E. Scott, and applying for nomination by the Council under Bye-law 3 (*d*).

Clarke: Richard [Special Final], 10 Salford Road, Ainsdale, Southport, Lancs. H. A. Dod, T. B. Medcalf, Prof. L. B. Budden.

Cleaver: Gilbert Rhodes [Special Final], Sir Josiah Mason's School, Erdington, Birmingham, 24. Hurley Robinson, W. J. Lewis, J. W. Wilson.

Davies: Kenneth Luther, A.R.I.C.S. [Special Final], 9 Chatsworth Crescent, Allestree, Derby. E. W. Pedley, T. H. Thorpe, T. N. Cartwright.

Davison: Ernest William [Special Final], 8 Temple Park Avenue, Blackrock, Co. Dublin. J. H. Stevenson, Vincent Kelly, J. O'H. Hughes.

De Silva: Minette (Miss) (Arch. Assoc. (London): Sch. of Arch.), 15 Savile Row, W.1. R. F. Jordan, Howard Robertson, L. H. Bucknell.

Dixon: John James Scott [Final], 'Manningtree House', 145 Welholme Road, Grimsby, Lincs. J. A. Clarke, W. Tweedy, F. Willey.

Elmer: Joseph Henry [*L*] [Special Final], 41 Mountview Court, Green Lanes, N.8. D. Nightingale, E. S. Ambrose, Kenneth Dalgliesh.

Emsley: Ronald Gordon (Northern Poly. (London): Dept. of Arch.), 29 Torrington Park, North Finchley, N.12. T. E. Scott, and applying for nomination by the Council under Bye-law 3 (*d*).

Evans: Daphne Carlyon (Miss), B.A. (Bartlett Sch. of Arch.: Univ. of London), 3 Claremont House, Lithos Road, N.W.3. Prof. H. O. Corfiato, W. F. C. Holden, R. J. H. Minty.

Fosbury: Ernest Arthur [Special Final], 36a Downing Street, Farnham, Surrey. G. M. Aylwin, O. P. Milne, H. I. Ashworth.

Foster: Ivor George [*L*] [Special Final], 52 Boswell Road, Thornton Heath, Surrey. Victor Wilkins, R. T. Currie, A. H. Gale.

Giddings: Hubert Ronald [Special Final], 33 Cornerswell Road, Penarth, Glam. Lewis John, L. R. Gower, G. H. Griffiths.

Goodey: Wilfred [Special Final], 14 Thistledene, East Molesey, Surrey. J. C. Miller, F. J. Searley, and applying for nomination by the Council under Bye-law 3 (*d*).

Graydon: Robert William [Special Final], 10 Eastward Green, W. Monkseaton, Northumberland. S. M. Richmond, G. E. Charlewood, J. A. Clarke.

Grierson: Colin [Final], 62 York Road, Headington, Oxford. H. W. Smith, H. F. Hurcomb, Alec Nisbet.

Griffin: George Robert Edward [Special Final], 78 Rosehill Park West, Sutton, Surrey. C. G. Kemp, J. A. Dempster, E. E. Somake.

Gurney: Geoffrey Howard, A.R.I.C.S. [Special Final], Saddlers End, Morden Hall, Morden, Surrey. H. I. Ashworth, Sydney Tatchell, L. K. Hett.

Hains: Eric Price [Final], 11 Barnfield Road, Exeter. H. B. Rowe, H. V. de C. Hague, H. M. R. Drury.

Haines: Harry Sidney [Special Final], 9 Isham Road, Norbury, S.W.16. J. K. Hicks, Charles Blythin, Graham Crump.

Hames: Jack Cecil Marshall [Special Final], 2 Downside Crescent, Belsize Park, N.W.3. J. S. Walkden, Lord Mottistone, H. I. Ashworth.

Harvey: Albert Edgar [Special Final], 31 Walton Well Road, Oxford. R. F. Dodd, Thomas Rayson, David Beecher.

Harvey: William James [Final], 155 Queen's Drive, Finsbury Park, N.4. E. C. Scherrer, J. K. Hicks, T. S. Darbyshire.

Havers: Norman, M.B.E. [Final], 59 Llandennis Road, Roath Park, Cardiff. R. A. Phillips, Harry Teather, C. F. Jones.

Haworth: Kenneth Hargreaves [Special Final], 59 Longsight Road, Holcombe Brook, nr. Bury, Lancs. H. T. Seward, W. C. Young, Isaac Taylor.

Headley: William Robert (Arch. Assoc. (London): Sch. of Arch.), 16 Greville Place, St. John's Wood, N.W.6. R. F. Jordan, L. H. Bucknell, J. M. Easton.

Hill: Derek John [Special Final], Merchistoun Farm House, London Road, Horndean, Hants. E. J. Thomas, V. G. Cogswell, A. C. Townsend.

Hodnett: Alfred Ernest [Special Final], 4 Congreve Road, Eltham, S.E.9. J. A. Slater, A. H. Moberly, Philip Hepworth.

Holland: William Fishley [Special Final], The Rectory, Kingston Seymour, nr. Clevedon, Somerset. J. N. Meredith, E. H. Button, L. S. Stanley.

Hughes: Eric Charles Colin [Final], 20 Mays Hill Road, Shortlands, Kent. H. A. Welch, F. J. Lander, K. M. Winch.

Hughes: Henry Graham [Special Final], 12 Abbot Street, Belfast, N. Ireland. T. R. Eagar, R. H. Gibson, J. R. Young.

Hughes: William (Welsh Sch. of Arch.: The Tech. Coll., Cardiff), Ffynnon Lodge, Bronwydd Avenue, Pen-y-lan, Cardiff. Lewis John, L. R. Gower, Howard Williams.

Hutchinson: Ralph [Special Final], 1 Kingsley Road, Greenbank, Bristol, 5. J. N. Meredith, A. F. French, L. S. Stanley.

Jack: Charles Davidson [Special Final], Burnfoot, Fairlie, Ayrshire. W. J. Smith, W. Underwood, G. F. Shanks.

Jackson: John Patrick James (The Poly., Regent Street, London: Sch. of Arch.), 36 Brockman Rise, Bromley, Kent. J. S. Walkden, H. C. Mason, H. I. Ashworth.

Johnson: Brian Robert [Final], Strathmore, St. Margaret's Bay, nr. Dover, Kent. Prof. H. O. Corfiato, L. S. Stanley, H. I. Ashworth.

Johnston: Dorothy Kate (Miss) [Final], 'Engelberg', South Street, Cottingham, E. Yorks. G. D. Harbron, W. B. Wheatley, Allanson Hick.

Jones: Frederick Evan [Special Final], 42 St. Barnabas Road, Walthamstow, E.17. T. E. Scott, D. W. Aldred, C. W. Box.

Kempton: Claude Walter [Final], 30 Broomfield Avenue, Palmers Green, N.13. T. E. Scott, T. B. Daniel, E. W. Palmer.

Kimm: Charles Francis [Special Final], 181 Forest Road, Walthamstow, E.17. T. E. North, C. C. Shaw, T. E. Scott.

Lacey: Kenneth Lloyd James [Final], 30 Lakenfields, Stratford Drive, Norwich. J. O. Thompson, L. G. Hannaford, C. J. Tomkins.

Larbalestier: Francis Henry [Special Final], 29 Trevor Road, Edgware, Middlesex. Michael Waterhouse, Cedric Ripley, T. E. Scott.

Lambourn: Robert Alan [*L*] [Special Final], 'Beckermonds', Knowle Grove, Virginia Water, Surrey. T. T. Cumming, H. C. Mason, O. F. Savege.

Lavender: Mavis Eileen (Miss) [Final], 81 Mulgrave Road, Sutton, Surrey. L. R. Guthrie, W. B. Simpson, G. W. Knight.

Lawrence: Sidney George [Special Final], 262 Trinity Road, Wandsworth Common, S.W.18. H. J. Axten, C. W. Box, Cecil Masey.

Lister: Martin Henry [Final], 29 The Broadway, Holderness Road, Hull. G. D. Harbron, F. J. Horth, H. Andrew.

Little: John Michael Desmond [Special Final] 35 Mount Ararat Road, Richmond, Surrey. Sir Giles Scott, A. G. Scott, F. G. S. Thomas.

Lovegrove: Cyril Ernest [Special Final], 34 Fairways, Dyke Road, Brighton, Sussex. E. A. Verger, K. E. Black, J. L. Denman.

Lovell: George Ronald [Final], 30 Ellesmere Street, Moss Side, Manchester, 16. C. E. Pearson, H. T. Seward, W. C. Young.

McDonald: Angus [Final], 'Belgrave House', 15 Cotham Grove, Cotham, Bristol, 6. G. D. G. Hake, J. N. Meredith, E. H. Button.

McRobbie: John Austin [Special Final], 5 West Point, Innellan, Argyll. J. Weekes, G. G. McLean, A. G. Henderson.

Mackay: Moira Train (Miss) (Edin. Coll. of Art: Sch. of Arch.), Rockbank, Campbeltown, Argyll. J. R. McKay, A. H. Mottram, T. F. Maclennan.

Main: Thomas Bell [Special Final], 8 Armour Avenue, Airdrie, Scotland. James Taylor, W. Underwood, Prof. W. J. Smith.

Marriott: Douglas Haig (The Poly., Regent Street, London: Sch. of Arch.), 8 Lennard Avenue, West Wickham, Kent. J. S. Walkden, H. I. Ashworth, L. K. Hett.

Marston: Sidney Bernard [Final], 41 Lauderdale Mansions, Maida Vale, W.9. T. F. W. Grant, J. S. Walkden, T. E. Scott.

Martin: Hugh Harold [Final], 19 Airlie Place, Dundee. A. D. Haxton, J. D. Mills, Leslie Grahame-Thomson.

Martin: James Allan, D.C.M., Dip.Arch (Edin.) (Edin. Coll. of Art: Sch. of Arch.), 27 Trinity Crescent, Edinburgh. A. H. Mottram, T. F. Maclennan, J. R. McKay.

Mather: Joseph Leslie [Final], 'Lyndene', 47 Neville Avenue, Anchorsholme, Cleveleys, Lancs. J. A. McBeath, A. G. Chant, C. H. MacKeith.

Mew: Leonard [Special Final], 'Kaylen', Galmington, Taunton. R. O. Harris, E. C. Francis, H. A. R. Ellis.

Mitchell: Maurice Thomas [Special Final], 3 Cranbrook, 41 Oakleigh Park South, N.20. A. E. Kingwell, Clyde Young, W. F. Granger.

Mold: Arthur Henry Wilson [Special Final], 66 Monmouth Road, Hayes, Middx. G. W. Jackson, Terence Carr, J. D. Wood.

Orton: Richard Antony (Arch. Assoc. (London): Sch. of Arch.), 3 Pallant Court, West Pallant, Chichester, Sussex. R. F. Jordan, A. R. Anderson, Duncan Wylson.

Overbury: Thomas (Jnr.) [Special Final], Watercombe, Brimpsfield, nr. Gloucester. G. D. G. Hake, H. S. Davis, H. T. Rainger.

Parry-Evans: David [Special Final], 46 Prenton Dell Road, Prenton, Birkenhead, Cheshire. Edgar Quiggin, Lt.-Col. E. Gee, L. S. Stanley.

Paterson: Sydney James (Edin. Coll. of Art: Sch. of Arch.), 'Taprobane', Ratho Park Road, Ratho, Midlothian. E. J. MacRae, A. H. Mottram, J. R. McKay.

Pegrum: William Aubrey, T.D. [*L*] [Final], 22 Lansdowne Court, Brighton Road, Purley, Surrey. J. K. Hicks, T. W. East, Charles Blythin.

Pickles: Richard Herbert [Special Final], 'Yew Tree', St. Giles' Road, Lightcliffe, nr. Halifax. C. Sunderland, J. F. Walsh, and applying for nomination by the Council under Bye-law 3 (*d*).

Piercy: Thomas Joseph (Captain) [Special Final], 79 Grange Road, Erdington, Birmingham, 24. Hurley Robinson, L. S. Stanley, W. J. Lewis.

Pimm: Arthur Sidney Bernard [Special Final], 4 Primrose Lane, Solihull, Warwickshire. J. B. Surman, C. E. M. Fillmore, H. W. Hobbiss.

Pitman: Sheila Margaret (Miss) (Northern Poly. (London): Dept. of Arch.), 12 Totnes Walk, N.2. T. E. Scott, H. Lidbetter, F. R. S. Yorke.

Price: Geoffrey Rowland [Special Final], The Old School, Chicheley, Bletchley, Bucks. Alwyn Underdown, F. D. Ward, Rolf Hellberg.

Priestley: Thomas John [Special Final], Magdala House, Station Square, Beverley, E. Yorks. Kenneth Ward, J. S. Syme, C. W. C. Needham.

Purnell: Norman Keet [Special Final], 11 Selcroft Road, Purley, Surrey. T. E. Scott, H. W. Burchett, C. G. Stillman.

Quinn: Kevin John [Special Final], 39 Belton Park Avenue, Donnycarney, Dublin. J. O'H. Hughes, J. J. Robinson, Raymond McGrath.

Rahalkar: Bhaskar Narayan [Final], c/o Mrs. Jarvis, 1 Inverness Gardens, W.8. R. A. Cooksey, G. M. Kingsford, and applying for nomination by the Council under Bye-law 3 (*d*).

Rampton: Thomas Lewis [Special Final], 18 Falmouth Avenue, Highams Park, E.4. John Bennett, G. D. Hamilton, A. Thomerson.

Richardson: Kenneth French [Special Final], 19 Ederline Avenue, Norbury, S.W.16. R. B. Walker, D. L. Solomon, Morris Joseph.

Rider: Lionel Sidney [Special Final], 33 Clarence Avenue, New Malden, Surrey. Rees Phillips, and applying for nomination by the Council under Bye-law 3 (*d*).

Roberton: Ronald James [Special Final], 5 Deanwood Avenue, Muirend, Glasgow, S.4. G. A. Boswell, G. G. McLean, Prof. W. J. Smith.

Robinson: Denis Jessop [Final], 59 Wylde Green Road, Sutton Coldfield, Birmingham. George Drysdale, J. W. Wilson, S. Bentley.

Schofield: Harry [*L*] [Special Final], 65 Surgey's Lane, Arnold, Nottingham. H. K. Ablett, T. C. Howitt, George Checkley.

Searle: David Odell [Final], Amen House, Warwick Square, E.C.4. L. K. Hett, L. A. Chackett, L. A. Culliford.

Silkstone: Ronald [Special Final], 12 Albion Way, Lewisham, S.E.13. Norman Culley, G. M. Trench, T. E. Scott.

Smith: Paul Douglas (King's Coll. (Univ. of Durham), Newcastle-upon-Tyne, Sch. of Arch.), 4 Sheldon Road, South Shields. Prof. W. B. Edwards, G. T. Brown, S. W. Milburn.

Spencer: George Herbert [Special Final], 43 Upland Road, South Croydon, Surrey. L. A. Chackett, L. A. Culliford, H. D. Roberts.

Tancock: Bernard John [Special Final], 30 Holland Road, Kensington, W.14. H. S. Goodhart-Rendel, H. L. Curtis, T. J. Lynch.

Tapner: Benjamin Charles [Special Final], 5 Lambeth Palace Cottages, Lambeth Palace, S.E.1. R. B. Walker, Lord Mottistone, K. E. Black.

Tasker: Ronald Robert John, M.B.E. [Special Final], 'Deva House', 145 Boughton, Chester. P. H. Lawson, E. M. Parkes, F. C. Saxon.

Tavener: Brenda Jean (Miss) (Bartlett Sch. of Arch.: Univ. of London), 2 Mullion Court, 112 Finchley Road, Hampstead, N.W.3. Prof. H. O. Corfiato, C. L. Gill, Prof. A. E. Richardson.

Taylor: Norman [Special Final], 47 Ruskin Avenue, Bradford Road, Wakefield. H. Bennett, and applying for nomination by the Council under Bye-law 3 (*d*).

Van Raat: Alfonso Christiaan [Special Final], 32 Prince of Wales Mansions, S.W.11. Victor Heal, R. Wilson, Edwin Williams.

Walker: Bernard Grainge [Final], 'Grenfell', 8 Mill Hill Road, East Denton, Newcastle-upon-Tyne. S. M. Richmond, W. W. Tasker, G. E. Charlewood.

Wall: James Stanislaus Joseph [Special Final], 30 Upper Fitzwilliam Street, Dublin. Vincent Kelly, J. V. Downes, J. J. Robinson.

Walles: Rudolf [Special Final], 36 Monarch Court, Lyttelton Road, N.2. C. G. Stillman, C. G. Kemp, E. E. Somake.

Wallis: John Rodney Edward [Special Final], 53 Lamorna Avenue, Gravesend, Kent. J. G. Bennett, L. S. Stanley, F. G. A. Hall.

Ward: William Michael [Special Final], 26 Vulcan Street, Manchester, 12. H. F. V. Newsome, Francis Jones, W. A. Johnson.

Whitehead: Alan [Special Final], 23 Elletson Street, Poulton-le-Fylde, Lancs. G. N. Hill, G. G. Speight, F. N. Pinder.

Whiteley: Frank Leslie [Special Final], 9 North Park Drive, Blackpool. C. H. MacKeith, Halstead Best, H. T. Jackson.

Wickham: James Hugh Degory [Final], Twinaways, Bideford, N. Devon. G. D. G. Hake, R. W. H. Vallis, T. H. B. Burrough.

Wilkinson: Neville Raine [Special Final], 31a Crendon Street, High Wycombe, Bucks. Arthur Harrison, R. G. Brocklehurst, E. A. L. Martyn.

Williams: Aubrey Wright [Special Final], 210 Boundary Road, Wood Green, N.22. H. B. Challen, T. E. Scott, J. T. W. Peat.

Woodbury: Neville [Final], 'The Warren', 31 Eldred Avenue, Withdean, Brighton, 5. K. E. Black, J. L. Denman, E. A. Verger.

Woollatt: James Gordon, D.F.C., M.A.Cantab. [Special Final], c/o Messrs. Evans, Clark and Woollatt, Eldon Chambers, Wheeler Gate, Nottingham. John Woollatt, T. C. Howitt, C. H. Calvert.

Worth: John William [Final], 17 Sunnycroft Road, Leicester. The late E. J. Williams, Kenneth Palmer, G. A. Cope.

Wright: Leslie Arthur [Special Final], 92 Birches Head Road, Hanley, Stoke-on-Trent, Staffs. J. R. Piggott, J. B. Adams, Clifton Edwards.

Wye: William Henry (The Poly., Regent Street, London: Sch. of Arch.), 74 Wadeville Avenue, Chadwell Heath, Essex. E. C. Scherrer, J. K. Hicks, J. S. Walkden.

AS LICENTIATES (12)

Biscomb: John Bannister, 12 Minster Yard, York; 49 Avenue Terrace, Clifton, York. C. W. C. Needham, Cecil Leckenby, Kenneth Ward.

Erdi: Louis, 27 Knightrider Street, E.C.4; 2 Dulwich Wood Park, S.E.19. M. R. Hofler, E. M. Fry, Miss J. B. Drew.

Fox: George Cyril, Midland Bank Chambers, Aldermans Hill, Palmers Green, N.13; 1 Blakesware Gardens, Edmonton, N.9. J. T. W. Peat, T. H. Gibbs, H. Colbeck.

Garth: William Alfred, c/o The County of London Electric Supply Co. Ltd., 46/47 New Broad Street, E.C.2; 'Grinton', 147 Repton Road, Orpington, Kent. W. Mollison, H. M. Luyken, S. B. Pritlove.

Gibbs: William Leslie, 34 Palace Court, Bayswater, W.2; 67 Christchurch Road, Tulse Hill, S.W.2. F. T. Dear, L. S. Crosbie, William Kaula.

Goldfinger: Erno, 69 Piccadilly, W.1; 2 Willow Road, N.W.3. F. R. S. Yorke, Prof. Sir Patrick Abercrombie, Frederick MacManus.

Hutchinson: Martin, 7 Carlos Place, W.1; Belas Knap, Oxshott, Surrey. C. H. Rose and applying for nomination by the Council under Bye-law 3 (*d*).

Machin: Herbert, c/o Metropolitan Borough of Hackney, Town Hall, Mare Street, E.8; 174 Windermere Avenue, South Kenton, Wembley, Middx. E. L. T. Hoare, H. R. Chanter, F. W. Charity.

Marmorek: Walter Hans, Victoria House, Southampton Row, W.C.1; 9 Lancaster Gate, W.2. C. Cowles-Voysey, E. M. Joseph, Raglan Squire.

Tong: Herbert Stephen, A.R.I.C.S., A.M.T.P.I., 100 Easton Street, High Wycombe; 'Hillcroft', Brands Hill Avenue, High Wycombe. S. C. Garrett, E. A. L. Martyn, R. G. Brocklehurst.

Trigg: Ronald Vardy, County Architect's Dept., County Hall, Northampton; 18 Beech Grove, Boothville, Northampton. Joseph Perkins, A. N. Harris, A. E. Eberlin.

Wood: Philip Edward, c/o Messrs. Woolcombers Ltd., Duckworth Lane, Bradford; 16 Richmond Avenue, Fartown, Huddersfield. Norman Culley, N. R. Paxton, W. H. King.

Members' Column

This column is reserved for notices of changes of address, partnership and partnerships vacant, or wanted, practices for sale or wanted, office accommodation, and personal notices other than for posts wanted as salaried assistants for which the Institute's Employment Register is maintained.

APPOINTMENTS

Mr. J. Grenfell Hird [*A*] has been appointed Senior Planning Assistant to Worcestershire County Council and will be pleased to receive trade catalogues, etc., at the County Planning Dept., County Buildings, Worcester.

Mr. W. T. Jeffries [*A*] has been appointed County Planning Officer to the County Council of the Soke of Peterborough, having relinquished his duties as Technical Officer with the Ministry of Town and Country Planning (Greater London Region); business and professional communications should be addressed to him at County Planning Dept., County Offices, Bridge Street, Peterborough.

Mr. Richard C. Symonds [*A*] has been appointed Chief Planning Assistant (Architectural) to the Cheshire County Council. His new address is Bridgegate House, Lower Bridge Street, Chester.

Mr. W. J. Twemlow [*A*] has been appointed Chief Architect to Iscor (South African Iron and Steel Corporation) Housing Utility Company, with offices at Vanderbijl Park, Transvaal, South Africa. He will be pleased to receive trade catalogues, etc., particularly those relating to large scale housing, flats and schools.

PRACTICES AND PARTNERSHIPS

Mr. John J. Cardwell [*A*], having disposed of his interests in the firm of **Mayell Webb and Cardwell** [F/L/A], is now practising on his own account at 22, Church Road, Tunbridge Wells (Tunbridge Wells 370).

Mr. Alfred C. Church [*A*], having resigned his appointment as Deputy Architect and Town Planner to the Singapore Improvement Trust, has commenced private practice as Architect and Town Planning Consultant with Messrs. Swan and Maclaren of Hong Kong, Bank Chambers, Singapore, which will be his new address after 1 July 1948. He will be pleased to receive trade catalogues, etc., there after that date.

Mr. A. Roy Clare [*L*], of 1 High Street, Pinner, Middlesex, has opened a branch office at 42 Baker Street, Weybridge, Surrey, and will be pleased to receive trade catalogues, etc.

Mr. W. J. Lewis [*F*] took his sons, **Mr. H. R. Lewis** [*A*] and **Mr. J. V. Lewis**, into partnership during April 1946. The practice will continue at 37 Cranbrook House, Cranbrook Road, Ilford, Essex (Ilford 1799), under the title of **W. J. Lewis and Sons.**

Mr. W. T. Williams [*A*] has taken into partnership **Mr. G. B. A. Williams** [*A*] and **Mr. J. S. Williams,** A.M.I.C.E., and they are practising from 35 Holland Park, London, W.11 (Park 5388), under the style of **W. T. Williams and Partners.** They will be pleased to receive trade catalogues, etc., at that address.

Mr. G. F. Wilson [*L*] has become the London Partner of **Cotton, Ballard and Blow,** practising at Dorland House, Regent Street, S.W.1, and will be pleased to receive trade catalogues, etc.

CHANGES OF ADDRESS

Mr. James H. A. Baker [*A*] has moved to 103 Greenland Crescent, Southall, Middlesex.

Mr. Richard Carter [*A*] has removed to Lyndum House, High Street, Petersfield, Hants (Petersfield 866), and will be pleased to receive trade catalogues, etc.

Mr. Alfred H. Durnford [*L*] and **Mr. Harold W. Moore** [*A*], practising as **Durnford and Moore,** moved their offices on 31 March to 8 Clarges Street, Piccadilly, W.1 (GROsvenor 2781-2).

Mr. A. W. Jardine [*A*] has removed from 166 Cottenham Park Road, West Wimbledon, to 16 Wrayfield Road, North Cheam, Surrey.

Mr. Bronek Katz, Dipl. Ing. Arch. and **Mr. Reginald Vaughan** [*A*], practising as **Bronek Katz and R. Vaughan,** have removed to 35 Welbeck Street, London, W.1 (WELbeck 8855) and will be pleased to receive trade catalogues, etc.

Mr. F. Bertram Last [*A*] has removed from 69 Lincoln's Inn Fields and will in future practise from Lanehurst, Worth Park Drive, Crawley, Sussex, where he will be pleased to receive trade catalogues. His telephone number is Pound Hill 3225.

Mr. J. R. Stammers [*A*] has removed from 34a Netherhall Gardens, London, N.W.3, to 81a Doods Road, Reigate, Surrey.

Mr. T. A. Sutcliffe [*A*] (Sutcliffe and Collins) has moved his office to 31a John Adam Street, Adelphi, London, W.C.2 (TEMple Bar 6813), where he will be pleased to receive trade catalogues, etc.

Mr. Ivan W. Watkin [*A*] and **Mr. Charles Piazza** [*L*], practising as **Watkin and Piazza** have moved to 1 St. Leonard's Terrace, London, S.W.3 (SLOane 3237), where they will be pleased to receive trade catalogues, etc.

PRACTICES WANTED

Members wish to purchase practice with sound connections in Birmingham-Wolverhampton area. Reply, Box 138, C/o Secretary, R.I.B.A.

WANTED AND FOR SALE

For sale. Drawing table (with trestles), 6 ft. × 4 ft. 6 in., all edges in hard wood. Reply Box 134, C/o Secretary, R.I.B.A.

For sale. Combined desk and bookcase (6 ft. 6 in. × 2 ft. 6 in. × 6 ft. 9 in. high), containing 20 drawers, drawing table (9 ft. × 4 ft. 9 in.) on trestles, drawing boards, level, T-squares, levelling staff, ranging poles, land chain, tapes, etc. Reply Box 139, C/o Secretary, R.I.B.A.

For sale. Dumpy level and tripod. Four-screw, with fine adjustment and compass, all in good condition. £15. Reply Box 140, C/o Secretary, R.I.B.A.

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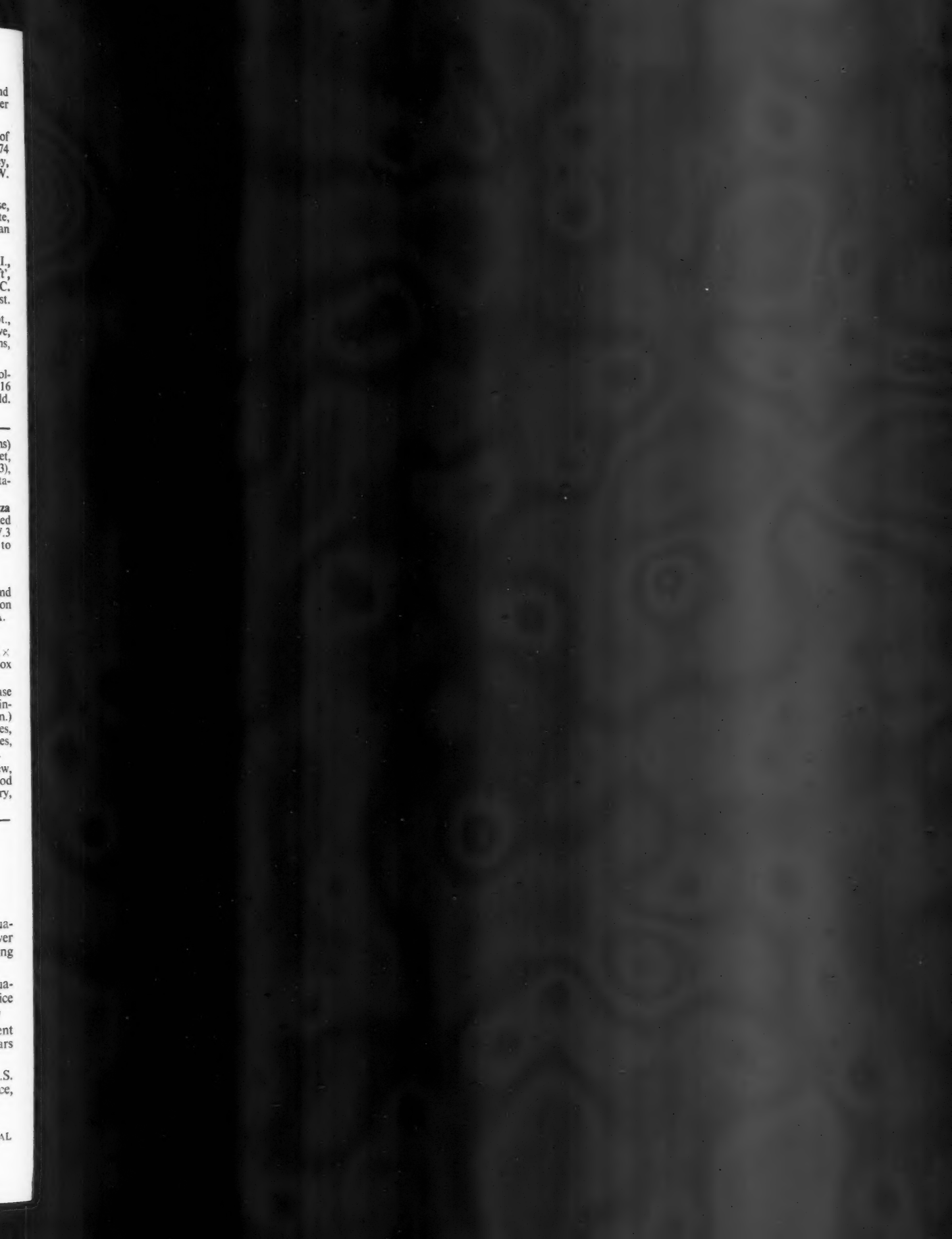
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